115574 [illegible]

EX·LIBRIS·COLL·MED·PHILAD·INSTIT·A·D·MDCCLXXXVII

NON SIBI SED TOTI

Class ____ No ____

IN EXCHANGE

5.25

Bound by H. ZUCKER
Phila

Digitized by the Internet Archive
in 2016 with funding from
The National Endowment for the Humanities and the Arcadia Fund

https://archive.org/details/nebraskastatemed8192nebr

The Nebraska State Medical Journal

Volume VIII
January 1923 -- December 1923

F. A. LONG, M. D., F. A. C. S., Editor
R. B. ADAMS, M. D., Associate Editor
A. S. ERIXON, Business Manager

Committee on Journal and Publication

F. A. LONG, M. D., Chairman	B. F. BAILEY, M. D.
W. O. BRIDGES, M. D.	R. B. ADAMS, M. D., Ex-Officio

THE HUSE PUBLISHING COMPANY, Norfolk, Neb.

LIBRARY
COLLEGE OF PHYSICIANS
OF PHILADELPHIA

INDEX TO VOLUME VIII

Acute Appendicitis Complicating Pregnancy, A. W. Anderson 102
Acute Empyema, Herbert H. Davis 438
Acute Gastritis, M. L. Wilson 170
Appendicitis or What? J. M. Mayhew 265
Annual Convention, 55th 247
Before and After, A. L. Bixby 39
Board of Councilor's Meeting 76
Books Received 115, 151, 260, 420
Case of Exceptionally Rapid Recovery Following Removal of a Spinal Cord Tumor, J. Jay Keegan 176
Case Reports 38, 174
Case Reports Illustrating the Accurate Treatment of Diabetes Mellitus, Miles J. Breuer 52
Catheterization of the Duodenum, Clarence Emerson 58
Certain Practical Points Concerning the Diagnosis and Treatment of Heart Disease, J. B. Herrick 301
Chronic Cystic Mastitis, Max Emmert 24
Chronic Empyema with Broncho-Pleural Fistula, C. H. Waters 369
Chronic Endocervicitis, M. W. Flothow 132
Chronic Infection Arthritis, Lynn T. Hall 392
Clinical Interpretation of a Systolic Murmur, W. N. Anderson 156
Common Clinical Arrhythmias, Warren Thompson 160
Common Problems in the Eye Diseases of Infancy and Childhood, Sanford Gifford 165
Constipation in Children, E. S. Wegner 327
Cult Menace, E. L. Bridges 201
DEATHS—See Necrology.
Degenerative Heart or the Myocardium as the Prime Factor in Cardiac Disease, The, George W. Covey 163
Diagnosis of Obscure Tuberculosis, The, M. J. Breuer 347
Doctor's Relatives, The, Lucien Stark 310
Double Uterus and Report of Case. A. L. Kee 101

EDITORIALS—
  About Breeding 73
  Acute Head Injuries 414
  American Puzzle, The 148
  Annual Meeting Attendance 375
  Brief History of Medical Organization in Omaha, A 377
  Bring the Line Up to the Flag 178
  Case Management 148
  Cancer Campaign, The 1923 412
  Cancer Week Programs 32
  Chronic Osteomyelitis 257
  Clinical Congress, American College of Surgeons, Tenth Annual Meeting 450
  Conference of State Secretaries and Editors, The, ... 450
  Danger to Medical Education, A 146
  Dean of the Omaha Profession, Dr. W. S. Gibbs 338
  Distribution of Insulin 335
  Drug Therapeutics in Heart Disease 71
  Economics of Medicine and Surgery, The, ... 453
  Electronic Theory and the Oscilloclast, The .. 147
  End of Volume VIII, The, ... 450
  Federal Department of Education, Health and Welfare, A 108
  Getting in Closer Touch with the Public 257
  Giving Away the Grand Island Soldier's Home 334
  Helping Each Other 452
  Heredity 415
  Heredity in Disease 110
  Honor Him to Whom Honor is Due 147
  Insulin 180
  Lancaster County Medical Society 70
  Lesson in Hospitalization, A 294
  Lincoln Meeting, The 216
  Malignancy of the Testicle 375
  Medical Legislation 146
  Meeting Interstate Society of Radiology and Mo. Valley Medical Society 374
  Message from the Secretary 32
  Miracle of Milk, The 297
  Mortality of Some of the Communicable Diseases of Childhood 413
  Nebraska Hospital for the Tuberculous, The. 294
  New Secretary of the A. M. A. 32
  Old Swimming Hole, The 334
  Opportunity for Organized Effort, An 256
  Pioneer Physician of the Elkhorn Valley, A—Dr. Bear 111
  Point of View, A 109
  Polemics and Evolution 338
  President's Greeting 33
  Profession of Rural Nebraska, The 108
  Profiteering in Medicine 216
  Radium in the Treatment of Cancer 36
  Relation of the Doctor to the Public 2
  Reorganizing the Profession 376
  Reviewing the Medical Profession 73
  San Francisco Meeting, The 298
  Sex Education from a Physician's Viewpoint .. 109
  Stiff Shoulder 179
  Study of Maternal Death in Omaha, A 34
  Teeth, The 149
  Tri-State Medical Meeting, The, ... 451
  Ventilation 295
  Vitamins 35
  Water for the Baby 72
  Why Pollen Treatment Often Fails 412
  Wiles of the Abortionist, The 374
Epigastric Hernia, Alfred J. Brown 1
Episiotomy and its Repair, Wm. Shepherd 240
Factors Influencing the Safety of Ether Anesthesia, R. M. Waters 136
Focal Infection, Arthur D. Dunn 5
Focal Infection of Dental Origin, W. L. Shearer .. 225
Focal Infection in Neuropsychiatry, G. Alex. Young 307
Fractures of the Femur, J. E. M. Thomson 381
Fulguration in the Treatment of Affections of the Lower Genito-Urinary Tract, Arbor D. Munger 62
Goiter Problem, The W. A. Rush 354
Goiter Problem, The, J. C. Waddell 351
Hemorrhage of the New Born, Floyd Clarke 329
Importance of a Pathological Laboratory in a Hospital, M. G. Wohl 143
Indication and Surgery of Caesarean Section, George P. Shidler 428
Indications for the Administration of Insulin, John Mills Mayhew 433
Induction of Labor at Term, The. W. W. Arrasmith 81
Injurious Effect of Improper Light on the Eye, L. B. Bushman 406
Insulin Treatment of Diabetes, LeRoy Crummer .. 205
Interpretation of Fevers in Children, The, John V. Reilly 97
Intra-Ocular Sarcoma, E. C. Foote 443
Intussusception, Floyd Clarke 142
Intussusception, in Children, Howard B. Hamilton 362
Keratomalacia, D. D. Sanderson 152
Local Anesthesia, J. M. Willis 324
Lumbar Spinal Puncture and Cisternal Puncture, J. Jay Keegan & T. E. Riddell 129
Malnutrition in Children of Pre-School Age, W. O. Colburn 213
Management of Acute Brain Injuries, G. E. Neuhaus 207
Management of Acute Sinus Infections, J. C. Tucker 287
Medical Economics, Edward H. Gardner 192
Medical Legislation, the Public and the Doctor, W. H. Wilson 14
Medical Practice as a Business, W. R. Boyer 99
Medical Practitioner and the American Society for the Control of Cancer, The, J. E. Rush 153
Medical Student, The, John W. Shuman 220
Megacolon, Report of a Case, H. M. McClanahan .. 331
Methods of Treatment of Affections of the Antrum of Highmore, A. G. Lueschen 397
Missed Abortion, C. H. Waters 289
Modern Measures, C. C. Johnson 65
Modern Scope of Orthopedic Surgery, James E. M. Thomson 67
Nature and Treatment of Interstitial Goiter, The. A. E. Hertzler 261

NECROLOGY—
  Bostock, F. H. 184
  Carriker, M. D. 456
  Catlin, G. S. 419
  Cavanagh, Peter 114
  Crane, Alfred 419
  Ewh, George 40
  Hall, P. L. 151
  Haslam, Geo. J. 219
  Hinrichs, Gustavus 114
  Inches, Charles 74
  Leake, E. N. 260
  Long, John H. 75
  Martin, J. B. 419
  Meade, H. 300
  Meriwether, C. N. 184
  Miller, A. H. 300
  Muir, Daniel 114
  Nelson, F. A. 340
  Nesbit, A. D. 74
  Pierce, Albert S. 151

Robinson, J. W. 418
Robinson, L. S. B. 75
Rose, L. D 456
Sedgwick, J. P. 151
Shields, W. D. 219
Snell, Chas. R. 219
Steele, Jos. T. 260
Stockwell, J. S. 75
Summers, H. S. 184
Thompson, E. S. 219
Ward, A. A. 418
Wekesser, H. P. 40
Wilcox, F. 184
Wood, Ruth M. 300

New Method of Treatment for Chronic Infections Involving Bone, H. W. Orr 50
Nonspecific Parenteral Therapy, C. H. Bastron 43
Non-Surgical Drainage of the Biliary Tract, Arthur L. Smith and Clara McMahon 421
Non-tuberculous Inflammation of Cecum, Fdk. G. Kolouch 106
Patient With a Psychosis, The, R. H. Sprading 358
Peptic Ulcer, J. M. Willis 95
Perforated Gastric and Duodenal Ulcer, A. C. Stokes 267
Peritoneal Infections of the Female Pelvis, B. A. Bobb 28
Point of Contact, The, Robt. McConaughy 399
Postgraduate Work in Disease of Children in England and on the Continent, Floyd S. Clarke 172
Preliminary Report of Results and Conclusion from One Year's Experience in High Voltage Roentgen Therapy, R. L. Smith 41
Present Status of the Treatment of Diabetes Mellitus, A. D. Dunn 221
Prevention and Cure of Pneumonia, F. A. Wells 313
Primary Mumps Infection of the Lacrimal Glands, A. E. Wade 404
Primary Uterine Inertia in Twin Pregnancy, A. Townsend 107
Problems of Epilepsy, H. A. Wigton 387
Rat-bite Fever, E. S. Wegner 408
Rational Treatment of Pneumonia, A. F. A. McGrew 316
Relation of Upper Respiratory Infection to Certain Chronic Diseases of the Chest, The, J. C. Thompson 436
Relationship Between Sinus Infection and Lower Respiratory Tract Infection, Geo. W. Covey 47
Report of Case of Acute Lymphatic Leukemia, Max Emmert 410
Report on Radium Therapy, A. E. J. Angle 236
Responsibility of the Medical Profession to Civilization, Benj. F. Bailey 185
Ruptured Tubal Pregnancy, Chas. F. Ulrich 105
Scientific Knowledge Logically Applied in the Treatment of Acute Urethritis, A. D. Munger 385
Some Clinical Phases of Diabetes Mellitus, W. J. Raynor 93
Some of the Problems in Caring for the Insane, D. G. Griffiths 276
Some Undesirable Effects of Deep X-Ray Therapy, Carl Kail 372
Specific Hypersensitiveness or Allergy as a Common Cause of Illness, W. W. Duke 241, 279
Study of the Present Day Economic Problems in Medicine, A. C. A. Roeder 197
Suprapubic and Perineal Prostatectomy, Edwin Davis 9
Surgical Study in Vienna Today, J. W. Duncan 122
Syphilis and Syphilis-like Affections of the Mouth, Alfred Schalek 285
Syphilis of the Upper Air Passages, Barney M. Kully 138
Thymus Disease in Children, H. E. Flansburg 211
Transfusion of Blood for Hemorrhage and Shock, Geo. L. Pinney 365
Transposition of Viscera, John E. Summers 117
Transverse Incision in the Surgery of the Kidney, J. E. Summers 273
Treatment of Acute Sinusitis, The, George B. Potter 168
Tumors of the Breast, B. B. Davis 341
Twentieth Century Obstetrics, A. B. Somers 16
Two Cases of Fybromyomata, Rudolph Rix 447
Type of Diet as an Etiological Factor in Diabetes Mellitus, J. E. Meyer 89
Vacuum Sinus, George A. Griot 407
Vitamins, H. M. McClanahan 120

AUTHORS
Anderson, A. E. 102
Anderson, W. N. 156
Angle, E. J. 236
Arrasmith, W. W. 81
Bailey, Benj. F. 185
Bastron, C. H. 43
Bobb, B. A. 28
Boyer, W. R. 99
Breuer, Miles J. 12, 174, 347
Bridges, E. L. 201
Brown, Alfred J. 1
Bushman, L. B. 406
Clarke, Floyd S. 142, 172, 329
Colburn, W. O. 213
Covey, George W. 47, 163
Crummer, LeRoy 205
Davis, B. B. 341
Davis, Edwin 9
Davis, Herbert H. 438
Duke, W. W. 141, 279
Duncan, J. W. 122
Dunn, A. D. 5, 22
Emerson, Clarence 58
Emmert, Max 24, 410
Flansburg, H. E. 211
Flothow, M. W. 132
Foote, E. C. 443
Gardner, Edw. H. 192
Gifford, Sanford 165
Griffith, D. G. 276
Griot, George A. 407
Hall, Lynn T. 302
Hamilton, Howard B. 362
Herrick, J. B. 301
Hertzler, A. E. 261
Johnson, C. C. 65
Kail, Carl 372
Kee, A. L. 101
Keegan, J. Jay 129, 176
Kolouch, Fdk. G. 106
Kully, Barney M. 138
Long, F. A. 32, 70, 108, 109, 111, 294, 299, 334, 338, 374, 412, 416
Lueschen, A. G. 397
McClanahan, H. M. 120, 331
McConaughy, Robt. 399
McGrew, F. A. 316
Mayhew, J. M. 265, 433
Meyer, J. E. 89
Munger, A. D. 62, 385
Neuhaus, G. E. 207
Orr H. W. 50
Pinney, George L. 365
Potter, George B. 168
Raynor, Willis J. 93
Reilly, John V. 97
Riddell, T. E. 129
Rix, Rudolph 447
Roeder C. A. 197
Rush, J. E. 153
Sanderson, D. D. 152
Schalek, Alfred 38, 285
Shearer, W. L. 225
Shepherd, Wm. 240
Shidler, George P. 428
Shuman, John W. 220
Smith, Arthur L. and Clara McMahon 421
Smith, Roscoe L. 41
Somers, A. B. 16
Spradling, R. H. 358
Stark, Lucien 210
Stokes, A. C. 267
Summer, John E. 117, 273
Thompson, Warren 160
Thompson, J. C. 436
Thomson, J. E. M. 67, 381
Townsend. A. 107
Tucker, J. C. 287
Ulrich, Chas. F. 105
Wade. A. E. 404
Waters, C. H. 289, 369
Waters, R. M. 136
Wegner. E. S. 327, 408
Wells, F. A. 313
Wigton, H. A. 387
Willis, J. M. 95, 324
Wilson, M. L. 170
Wilson, W. H. 14
Wohl, M. G. 243
Young, G. Alex. 307

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, January, 1923. No. 1

CONTENTS

Epigastric Hernia, Alfred J. Brown, M. D., F. A. C. S., Omaha, Neb. 1
Focal Infection, Arthur D. Dunn, M. D., Omaha, Neb. 5
Suprapubic and Perineal Prostatectomy, the Advantages of Each, Edwin Davis, M. D., F. A. C. S., Omaha, Neb. 9
Medical Legislation, the Public and the Doctor, W. H. Wilson, M. D., Lincoln, Neb. 14
Twentieth Century Obstetrics—A Criticism, A. B. Somers, M. D., Omaha, Neb. 16
Chronic Cystic Mastitis, Max Emmert, M. D.. Omaha, Neb. 24
Peritoneal Infections of the Female Pelvis, B. A. Bobb, M. D., F. A. C. S., Mitchell, S. D. 28
Editorial Paragraphs 31
Infectious Jaundice—Reports Wanted 31

EDITORIAL—

Cancer Week Programs 32
New Secretary of the A. M. A. 32
A Message from the Secretary to the Members 32
The President's Greeting 33
A Study of Maternal Death in Omaha 34
Vitamins 35
Radium in the Treatment of Cancer 36
Report of First Case of Creeping Disease in Nebraska, Alfred Schalek, M. D., Omaha, Neb. 38
Human Actinomycosis—Reports Wanted 39
Perhaps Our Friends Are Joking 39
Before and After, A. L. Bixby 39
The Societies 39
Notes About the Doctor 40
Necrological 40

EPIGASTRIC HERNIA.*

Alfred J. Brown, M. D., F. A. C. S., Omaha, Nebraska.

In 1914 Alexis Moschkowitz(1) described in detail the pathological anatomy of epigastric hernia. He demonstrated that a small protrusion of the fat contained between the layers of the falciform ligament occasionally passes through the abdominal wall at one of the openings through which the vessels normally pass and gives rise to a definite clinical syndrome. The symptoms consist of attacks of pain at irregular intervals and of varying severity. This pain for the most part is referred to the stomach and is accompanied by a sensation of nausea and occasionally by vomiting. Physical examination reveals a small tumor mass, situated in the median line above the umbilicus which is intensely tender during the attack of pain, and becomes less tender as the acute attack wears off. For the intense pain, the nausea, and the anorexia, no definite explanation has been offered. The hernia, so called, does not possess a true sac of peritoneum, but consists, as noted, simply of a protrusion of fat along the course of a vessel.

In a subsequent communication Moschkowitz(2) described a series of cases in which the definite syndrome was present, but no protrusion could be felt. In its place there was a point of definite tenderness in the median line of the abdomen above the umbilicus, and this tenderness disappeared in greater or less measure, as the acute symptoms subsided. These cases were relieved by operation.

Many other observers have substantiated the findings of Moschkowitz, and today epigastric hernia has taken its place as a distinct

---

*Read at the meeting of the Nebraska State Medical Assn., Omaha, April 24, 1922.

115574 SEP 5 - 1924

clinical entity, giving rise to a definite clinical syndrome and exhibiting constant physical findings. No satisfactory explanation, however, has been offered for the symptomatology and for the fact that an operation, consisting simply in dissecting out the neck of the sac, ligating the vessel and pushing it back between the layers of the falciform ligament with a subsequent closure of the fascia of the abdominal wall, results in a positive cure of the symptoms in the great majority of cases. In some cases there may be an intercurrent intraabdominal condition as shown by Lewisohn(3) which will occasionally continue to give symptoms unless proper measures are instituted in addition to the care of the epigastric hernia, for examination has shown that epigastric hernia is often present and gives rise to no symptoms.

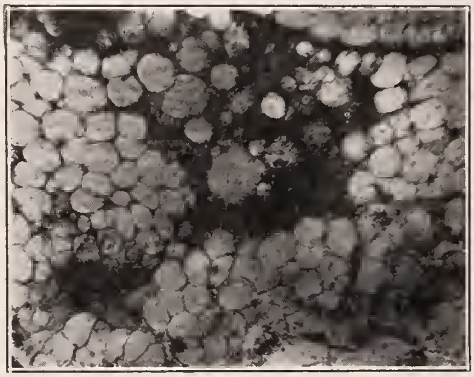


Fig. I.
Photomicrograph of one of the scattered hemorrhages in the properitoneal fat, showing disintegration of red cells.

In addition to the symptomatology noted above, I have had three cases in which haematemesis and occult blood in the stool were present.

The first patient, Mrs. M., 36 years of age, applied for treatment July 2, 1921. For the past seven years she has been bothered with gas forming in the stomach about twenty minutes after eating. This was relieved in about half an hour by belching and hiccoughing. Three months ago, April 1, pain appeared suddenly in the epigastrium. The pain had no particular relation to meals but was constant. It would be increased by exertion or by taking a deep breath when its character would become sharp and catchy. On May 9th, in the afternoon she became dizzy and vomited about three pints of blood. This was of a black color and of a consistency "like mud." For the next three days blood appeared in the stool but after the third day disappeared although repeated examinations for occult blood were made. This was the only time during her illness that she vomited. At the time of this attack of pain a palpable mass began to show in the abdomen. This increased gradually in size but was greatly reduced at the time of the vomiting and disappeared entirely three days later. The vomiting did not relieve the pain. At the time of admission there was a distinct mass situated in the median line superficial to the aponeurosis of the abdominal wall about one and one-half inches above the umbilicus which was tender on pressure. Urine was normal. Stomach contents were normal. Feces were negative for occult blood and blood examination was normal. On the 5th of July, 1921, the epigastric hernia was removed, the vessel ligated and the aponeurosis overlapped restoring the abdominal wall. Immediately after operation the pain disappeared and on February 27, 1922, the patient reports that attacks of gas are infrequent; no vomiting, no pain.

The second case of hemorrhage, Mr. W., 72 years of age applied for treatment on May 30, 1921, with a history that for twenty years or more he has suffered with occasional pain in the abdomen. For the past three months the attacks of pain have been extremely severe and there has been vomiting of stomach contents and blood. The attacks come on whenever he eats any solid food. He does fairly well on the early days of Lenhartz's diet but any attempts to increase the diet brings on pain and vomiting. Physical examination is negative except for a rounded tender mass situated in the median line of the abdomen one-third of the way from the umbilicus to the ensiform cartilage which, according to his family physician, increased and became exceedingly tender during the acute attacks. On June 2, 1921, he was operated upon under local anaesthesia and a small epigastric hernia slightly to the left of the median line, one-third of the way from the umbilicus to the ensiform was found. The neck of the hernia was plainly isolated and the aponeurosis incised around the neck, the fat containing the vessel was ligated beneath the aponeurosis, hernia removed, and the aponeurosis closed restoring the abdominal wall. Following the operation the pain disappeared and when last heard of in November 1921, he had had but one attack of what he called indigestion since his operation and was able to eat solid food. He went south for the winter and has not yet returned*.

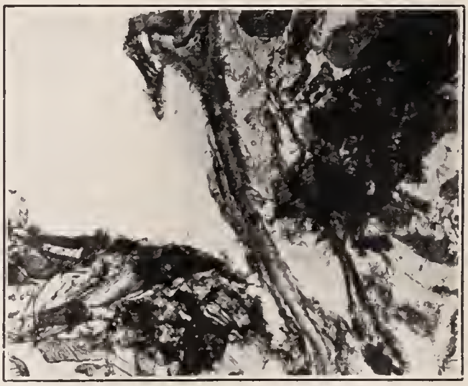


Fig. II.
Low power photomicrograph of the vessel passing through the aponeurotic wall. The vessel shows thickening and fibrosis.

The third case of hemorrhage is that of a woman 35 years of age who applied for admission to the University Hospital somewhat over a year ago for indefinite abdominal symptoms. A thorough physical examination was made including analysis of the stomach contents and barium X rays with the result that no sufficient indication for surgical interference was found and she was discharged without operation. She returned three weeks ago with the statement that since her previous admission she was operated on in another clinic and a thorough exploration of the abdomen made with the result that her intraabdominal organs showed no pathology; but the pain, vomiting of stomach contents and blood have persisted at intervals up to date. Examination at the time of her second admission revealed a small epigastric hernia just above the umbilicus. This was operated upon under local anaesthesia and since the time of operation the pain has entirely disappeared and the patient is able to be around without discomfort and pursue her natural habits of life. In all of these cases the hemorrhage had been of considerable amount and was not the type of hemorrhage characteristic of ulcer nor were any other signs or symptoms of ulcer demonstrable.

---

*(Since the above was written the patient has reported for examination. He has gained thirty pounds and is able to take and assimilate a diet practically normal for one of his years).

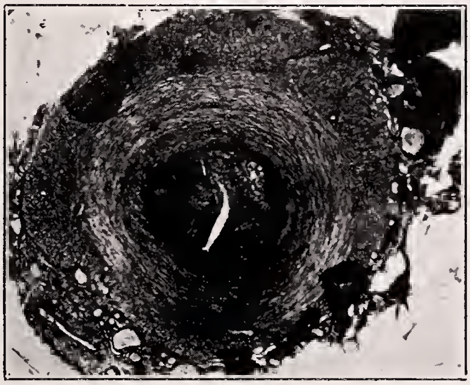


Fig. III.
Cross Section of vessel passing through the wall, showing thickening of all coats and a canalized thrombus in the lumen.

The cause of the pain and reflex gastric disturbance is difficult of explanation. The pain occurs distinctly in attacks. Is acute and agonizing and is increased by exertion. In the course of a few hours it gradually grows less to be followed by a period of soreness lasting for from several days to a week. In three of the cases it was noted that the mass became distinctly larger at the time of an acute attack. This together with the fact that Moschkowitz described cases in which there was no fatty protrusion but simply the vessel present with the typical symptomatology subsequently cured by operation led to the supposition that the pain might be of vascular origin. With this in mind six of the specimens removed at operation were examined microscopically by Dr. Eggers. He states: "In all, six specimens were submitted for examination. Two of these consisted solely of fat and fascial tissue, in both of these there were numerous areas of small hemorrhage, almost certainly not of operative origin, from the fact that the red cells showed considerable evidence of disintegration. Vessels were present in the other four specimens. One of these showed a completely organized and canalized thrombus. In two of the others there was evidence of perivascular inflammation in the way of round cell infiltration; and in the fourth the vessel itself showed changes suggestive of an endarteritis, in the way of marked thickening of the wall, particularly of the intimal portion."

The result of this microscopical examination would make it appear that the acute attacks of pain in this condition may be due to trauma exerted by the ring of the hernia either on the vessel which normally passes through the wall, or on the small pad of properitoneal fat which has protruded through the aponeurosis, the trauma being severe enough to give rise to vascular changes in one or the other of these structures. These vascular changes, either hemorrhage in the properitoneal fat between the layers of the falciform ligament or endarteritis or thrombosis in the vessel will cause a stimulation of the autonomic nerves which, as shown by Poirier(4) accompany the superior epigastric and inferior phrenic vessels of which the vessels perforating the aponeurosis are branches. These nerves then communicate with the solar plexus and thus a direct path can be traced by which stimulation of their filaments will give rise to a symptom complex similar to that of which patients complain. For the cause of the hematemesis which occurred in three of this present series of cases, I can offer no explanation but the subject is still under investigation and it is hoped that this may lead to an explanation of the hitherto unexplained massive gastric hemorrhage for which no cause has yet been assigned.

REFERENCES

1. Moschkowitz, A. V.; Surg. Gyn. & Obstet. 18-504., Apr. 1914.
2. Moschkowitz, A. V.; Annals of Surgery, 66-300., Sept. 1917.
3. Lewisohn. R., Surg. Gyn. & Obstet. 32-546., June 1921.
4. Poirier et Charpy.; Trait d'Anatomie.; p. 1110, Paris 1901.

DISCUSSION.

H. A. Johnson, M. D., Tekamah: The literature on epigastric hernia has been well covered in the paper we have just heard. I think one of the chief lessons we might learn is that in operating on an epigastric hernia we are able to do away with one of the complex symptoms that sometimes will come into the office making us consider a gastrointestinal condition. The term "hernia" used as an epigastric affair, is possibly a misnomer, insofar as we are dealing with the sac. There are three or four types spoken of, and the two that are encountered less frequently are those in which we have a peritoneal covering and intestinal contents. Very frequently we have between the umbilicus and the ensiform cartilage a bulging which cannot be strictly termed an epigastric hernia. It would seem it must be confined to those cases in which we deal with one of the vessels that emerge through fascia, carrying with it a prolongation of the fascia.

In my experience I have encountered two cases of epigastric hernia. The first one was a farmer about forty years of age, who had signs of stomach trouble. Incidentally, I watched him myself for about a year. I was interested in hearing the discussion concerning the occult blood in the stool. This patient did not present any of that. Eliminating everything else. the man presented constantly a tender spot between the ensiform cartilage and the umbilicus. I made an exploratory under local anesthesia. There was no palpable mass in this case. The incision was out of ignorance, attempting to find the pathology. This patient presented a small, V-shaped mass of fat. This little mass had a shining membrane over it which is often mistaken for the peritoneal covering. I teased the thing out at some length, expecting to run onto a structure that would simulate the peritoneal covering. I did not. Not knowing any different to do, being the first time I had stumbled onto anything of this sort, I ligated the fat, closed the slit in the aponeurosis and closed the skin. I have observed him eighteen months since, and he has not had pain at a subsequent time.

The second patient came with a more interesting type of history. He had five or six nodular fatty tumors over the body. He came with practically his own diagnosis—a tender nodule two inches above the umbilicus. He stated he could not understand why that one should pain and the others not. I made the diagnosis of an epigastric hernia. He had a small palpable mass about the size of a filbert and very tender. He had more pain after doing a hard day's work. A local anesthesia was used and the incision made. The perforating vessel was demonstrated and ligated and no sac discovered. The mass of fat was ligated, stump pushed back and aponeurosis split closed. Relief was immediate and has been so to this date.

A. B. Somers, M. D., Omaha: One of these patients was a patient of mine. I want to emphasize two or three little points. I had treated his family more or less. He came to my house one evening saying he was having one of his recurrent pain attacks, and it was more persistent than usual and he was vomiting some blood. I do not pretend to do any business in my house, and it was arranged he should see me at the office the next day. I was sent for to go to the house and give a hypodermic. I palpated his stomach. The thing that struck me was a good deal of thickening. I said, "He has cancer of the stomach." Next day we called a consultation. In a little while that subsided.

The point of special interest is how little there is to be learned by palpation after the induration has gone away. There was a tumor not more than an inch long. If anybody had the usual amount of adipose tissue, I do not see how it would be possible to palpate it. This man was very thin, and it could be done. Suppose a person had a large amount of adipose tissue, I do not see how you could palpate that. It would be more than I could do.

C. A. Roeder, M. D., Omaha: I have had four cases of epigastric hernia, one giving a perfect symptom complex resembling gastric ulcer, with hemorrhage. I think it is a condition frequently overlooked. more through a lack of careful examination. It is very interesting to see what this minor surgical procedure will do for these patients.

The size of the hernia has no relation to the size of the reflex. One of my cases had had four abdominal incisions, with no relief, so you can see the importance of its primary recognition. One must not mistake the high umbilical hernia for an epigastric; they are two entirely different types.

While operating upon these epigastric hernias, if one pulls upon them sufficiently, the peritoneal coat may be pulled through the fascial opening and then a sac like projection of peritoneum will be seen which has been mistaken for a true abdominal hernia.

I think Doctor Brown has called your attention to something of the utmost importance.

H. W. Quirk, M. D., Crete: I wish to relate a case which came to my notice a few days ago. I was called to see a lady sixty one years of age, who had been operated upon for the removal of her appendix and gall bladder four years ago. I had never seen her before, but she had been under the constant care of other physicians. In his absence, I was called to relieve the pain. I was perplexed at the condition, which now I think I understand more distinctly from Dr. Brown's description. I think I shall go home and advise that she have an operation, although I said, 'I do not like to interfere," because I was only called temporarily to relieve the pain.

I wonder in some of these cases previously operated on for gall bladder and appendix, whether there might be any relation between the two conditions—whether this condition ever followed operations? This has been described as an adhesion. There was a distinct tumor—not so very small—an irregularly shaped tumor the size of a small orange. She has had these attacks of vomiting and severe pain for years, coming on at irregular intervals without known cause, lasting but a few hours, and then she is completely relieved. She has gas in her stomach, and has taken car-loads of medicine, but it has given no relief.

H. B. Boyden, M. D., Grand Island: I have quite an interesting case that is a contrast to the case cited. Before the war, a soldier had an epigastric hernia about the size of a walnut. A general examination was made and the hernia operated on. The man felt fairly well at the time. He went through the hands of many medical men during the war, and was discharged. The surgeon he presented himself to later operated on him and got a handful of kidney stones. So that when you find an epigastric hernia, you must look elsewhere., too. The man did not have the kidney symptoms at the time, but when he presented himself eventually, he had blood in the urine. The symptoms were not relieved by having the hernia operated on.

A. J. Brown, M. D.: I want to thank the members of the Society for the free discussion. As stated, the term "hernia" is absolutely a misnomer. It is a protrusion of properitoneal fat, and has no true sac unless during the operation a sac is pulled out; or it is perfectly possible to visualize that later a sac may form by gradual stretching of the wall.

Exercise and motion increase the pain, as has been brought out.

The proposition of confusion with gall bladder, appendix or stomach syndrome is a difficult one. I have been interested since I have seen these cases in trying to trace a connection. I brought this up particularly because I believe that in the hemorrhage within the properitoneal fat and in the thrombosis of the vessel, we have an explanation of the periodicity of attacks and by irritation of the autonomic nerves we have traced a direct reflex path to the solar plexus. The symptoms are consequently referable to a gastrointestinal complex, which is not a true ulcer complex and is not a gall bladder complex.

Furthermore, it is perfectly possible for an individual to have an epigastric hernia which gives no symptoms.

I do not believe because a little nodule above the umbilicus is felt, one is justified in removing it. Examine the patient. Careful examination should be made of these patients who have had two or three so called gall bladder attacks and who may or may not have been operated on for gall bladder disease, appendicitis, and stomach disease. The patient in the University Hospital whose history I quoted has a large abdominal incision and nothing could be found at operation. She had the epigastric hernia operation, and that has apparently cleared up her symptoms.

If we are in doubt between two things, to my mind it is very much simpler under local anaesthesia to do a smaller operation, unless we can find definite reasons for going inside the abdomen. If later we find that symptoms are not relieved we may conclude that we have made a mistake and it may be necessary to explore the abdomen. The number of cases, however, in which, in the presence of the complex of symptoms which have been described, operation for epigastric hernia will relieve the symptoms justifies the simpler procedure as the primary one unless definite involvement of the intraabdominal organs can be proven without a doubt.

FOCAL INFECTION.*

Arthur D. Dunn, M. D., Omaha, Nebraska.

The principles of focal infection have been accepted and applied to the treatment of numerous diseases, such as acute and chronic arthritis, myalgia, neuritis, cardiac diseases, ulcer, cholecystitis, certain acute and chronic nephritides, etc. Recently Rosenow and his co-workers have demonstrated the application of the focal infection theory to pyelonephritis, nephrolithiasis, poliomyelitis and epidemic encephalitis. That organisms from such foci as tonsils, teeth and sinuses may have selective localization properties when they have once entered the blood stream, is probably the most far-reaching conception that has been introduced into clinical medicine in the past twenty-five years. In the applications of such a fundamental conception to the art of medicine, many difficulties will be encountered, failures will be common, and "faith in the idea" will be strained. Since the evaluation of the various infection factors is still uncertain, since surgical technique has not yet been so developed as to make our clinical experiments perfect, and since the therapeutic limitations have not been fixed, it seemed that a brief discussion of the application of the theory of focal infection to some incompletely understood disease complexes common to the day's work might be of interest. I shall sketch several such "clinical experiments," and discuss some principles that seem essential in the application of the focal infection idea, incidentally calling your attention to a technique for the removal of dental foci.

THE NEURASTHENIA-FAG TYPE.

(Cases 1 and 2).

Case 1. Dr. X. suffered from a neuritis of the musculo-cutaneous nerve of the right leg which had bothered him off and on for several years, from fag, insomnia, and mental depression. His weakness and depression had become so severe that he was unable to work and had resorted to ½ to 1 grain of morphine daily to combat his state of utter hopelessness.

A complete examination, including Wassermann reaction, revealed nothing but a poorly nourished, worn out man with a neuritis of the right musculo-cutaneous nerve. and an extensive infection of both alveolar processes.

The morphine was taken away gradually and the patient put on a hospital regime for ten days without material improvement. The mouth pathology was then removed by the operation to be described later. In six weeks he had gained twenty pounds in weight, had largely lost his neuritis, and stated that he felt better than he had in years. The patient's health was reported to be excellent after four and one-half years.

Comment. This case shows focal infection as a factor in producing neuritis, physical incapacity and mental depression amounting to a psychosis. In our records is a case of toxic psychosis with hallucinations, that had been under a hospital regime for eight weeks without improvement. The mental condition began to clear almost immediately after the removal of an extensive buccal infection.

Case 2. W. C., aged 38, complained of weakness, fag, inability to work, abdominal discomfort with gas, shortness of breath, and palpitation. He stated that he suffered from "drawing sensations all over the body," nervousness and sleeplessness, and that he had recently spent five weeks in a sanitarium without benefit.

---

*Abstract of a discussion on "Focal Infection" as given at the Elkhorn Valley Medical meeting, Norfolk, Neb., October 3, 1922.

Physical examination revealed nothing of importance except tonsils from which caseous material could be expressed, and three teeth with small dento-alveolar abscesses. He was of the eunuchoid type. The blood count gave 5,100,000 reds, 6,000 whites, and the hemoglobin, 87%. The Wassermann test was negative. An examination of the stomach contents, stool and urine revealed nothing abnormal. Roentgenological examinations of the chest and gastrointestinal tract were negative.

The mouth pathology was removed on the seventh day in the hospital, the tonsils on the nineteenth. No improvement had taken place up to the time of the tonsillectomy, following which improvement was rapid with a gain of twelve pounds in weight in four weeks. The patient reported at the end of five years that he felt well, and that he had needed no other treatment, although his strength was not all that could be desired.

Comment. The presumptive diagnosis in this case was neurasthenia. The patient was quite typical of this class, both in appearance (Stiller type), and in the indefiniteness of his complaints. Removal of foci of infection enabled this man to work and to enjoy reasonably good health. It has seemed to us that the conception of the excess load might be justly applied to focal infections in neurasthenics. The constitutionally and temperamentally deficient have a much harder struggle with their environment than the physically and mentally fit. Add to their fixed handicap the extra load of a focus of infection and the scale is more apt to turn against them. The lifting of the extra load and the concentration on their environmental problems of energy previously dissipated in combating removable infection, may determine success as against failure in life. The neurotic is a problem that will not down and any means that will help him to compensate his neurosis is worth while. We have records of a considerable number of "decompensated" neurotics who have been very materially helped by the removal of foci of infection.

HYPERTENSION — CHRONIC INTERSTITIAL NEPHRITIS.

Case 3. J. H. S., aged 45, complained of swelling of both limbs, polyuria, shortness of breath, and fatigue.

The points noted on examination were a moderate cardiac enlargement, a markedly accentuated aortic second sound, systolic blood pressure of 184, diastolic 80. There was edema of both feet. The urine had a specific gravity of 1015, contained 2 pro mille albumin, and no sugar. Hyalin casts, some kidney debris, and blood cells were present. The tonsils were enlarged and contained pus. The teeth showed numerous dento-alveolar abscesses.

The patient's condition began to improve immediately on removal of the infections. Two months later the urine still showed evidence of nephritis, but the blood pressure was normal. Four and one-half years later the urine was normal, the blood pressure was normal, the heart sounds were normal and the patient was doing unusually hard farm work.

Comment. This high blood pressure, the cardiac signs, the polyuria, and the urinary findings, all fitted into the picture of chronic interstitial nephritis. Complete recovery from this syndrome which is not usually seen under orthodox methods of treatment, is of interest. We do not maintain that the focal infections were the sole cause of the trouble but the sharp change in the patient's condition and the end result following the removal of these infections, supports the contention that they were a factor of prime importance. Fitz, of the Mayo Clinic(1), has recently emphasized tonsillar infection as an important factor in the production of chronic nephritis, citing five cases that were well three years after tonsillectomy. The return to, and continuance of a normal blood pressure is noteworthy, for hypertension as a symptom is much more fundamental than albumin and casts. From our experience, infections have seemed to be one of the few tangible factors entering into the production of hypertension. We have quite commonly seen appreciable drops in blood pressure with improvement in symptoms follow the removal of focal infections, when the result of previous dietetic and hygienic treatment had been little satisfactory. In hypertension cases where the heart was flagging under the load of a high pressure, the removal of infected tonsils or extensive alveolar disease has occasionally assisted in stabilizing the circulation.

VERTIGO.

Case 4. Mrs. R. R., age 49, complained of dizziness and weakness. The dizziness had been so severe that she had sat up very little in the previous eight months and had needed help when attempting to walk. She had been badly constipated and her appetite had been poor.

The patient was a poorly nourished, middle-aged woman. The tonsils were buried and septic. The left tonsil had an injected anterior pillar and was edematous. The submaxillary lymph glands were enlarged. The heart and lungs were normal; the abdomen was flabby, and diffusely tender in the right hypogastric region. The cecum was distended. The deep and superficial reflexes and sensations were normal. There was no nystagmus, and there were no auditory symptoms. The pelvis was normal. The blood showed 80% hemoglobin, 4,300,000 reds, 14,000 leukocytes, with 74% polynuclears. The Wassermann test was negative. A test meal showed a total acidity of 47, free HCl 25, and combined HCl 11. The stool examination was negative.

Films of the teeth showed extensive disease of both alveolar processes.

A roentgenological examination of the gastrointestinal tract revealed nothing of importance except a somewhat tender retrocecal appendix and delayed colon motility.

The patient was subjected to a hospital anticonstipation regime. At the end of ten days the colon function was normal but without appreciable improvement in the dizziness. Alveolectomy was then performed with complete removal of the mouth pathology. No improvement resulted. Two weeks later, the tonsils were removed. Within a week the dizziness had largely disappeared. Three weeks later the patient was discharged from the hospital with complete recovery from the vertigo. The leukocyte count had dropped from 14,000 to 6,500.

This clinical experiment would seem reasonably well controlled and conclusive as far as such an experiment can go. No suggestions were given to the patient. The procedures were merely carried out. The reaction of the vertigo to the tonsillectomy was sharp. We have records of eight cases of severe vertigo, in which the results of the experiment (tonsillectomy) have been good. In one case, removal of mouth pathology was followed by cessation of vertigo. A Meniere's syndrome was very much improved, both in severity and in frequency of attacks, by removal of extensive mouth disease. Failures, when successes might be anticipated, will occur from incorrect analyses of the etiology and from permanent changes having already taken place in the vestibular apparatus. One case of failure which illustrates this point, had in addition to badly infected tonsils, a hypertension of long standing (systolic blood pressure 210). All possible causes of vertigo should be canvassed before essaying the focal infection experiment. Obviously, cases of vertigo in otosclerosis, hypertension, arteriosclerosis, severe secondary or primary anemias, intracranial diseases, etc., are not promising material. Shambaugh(2) has written on primary diseases of the labyrinth as the result of focal infection. He logically inferred a neuritis of the vestibular nerve from tonsil infection, because of the known predilection of focal infection for single nerves. In the absence of experimental work with organisms grown from the tonsils, or of autopsy investigations which would naturally be a remote and difficult possibility, all conclusions in regard to the pathology of the condition must be speculative.

Extensive removal of teeth for focal infection has been much criticized of late, but such criticism falls, if cases receive the detailed study and thought which is their due. Teeth and tonsils must occasionally be sacrificed to no purpose, just as elsewhere justifiable surgical procedures come to naught, but if the indications are weighed with the same care that is wont to be given to laparotomies, the number of bootless removals will be limited. In the study of these cases, two fundamental reasons for the removal of a focus should be kept in mind: (1) the closure of a door of entrance into the circulation for infecting microorganisms and their toxins, and (2) the removal of a useless load which the system is compelled to carry. The load factor has not been sufficiently stressed. The energy required to keep an infection under control, destroy toxins and repair damage must be subtracted from the sum total of disposable energy. Therefore, the focus must be considered, not as the sole cause of disease, but as one factor or one condition participating in the production of that "peculiar abnormal course of the same processes which make up the life phenomena of healthy individuals." It might be well to adopt a dynamic viewpoint in studying disease and to conceive of certain diseases as resultants of several forces. It is a condition comparable to the dynamics of chemical reactions, involving several substances. One views disease too often from one fixed point, one assumes a single etiology and a single explanation for phenomena which may be the result of several forces. If pathology is the result of an effort at adaptation to unfavorable internal or external conditions, there can be no reason why the system may not be adapting itself to several different conditions or forces at the same time. In other words what we designate as a disease may be the resultant of the effort at adaptation, not to a single but to several forces. Typhoid fever illustrates the former group and the morbid states associated with senescence, the latter. It is quite apparent that efforts at adaptation to noxious agents, no matter how trivial, demand energy. It is the consciousness of this waste of energy that often brings the patient to the doctor complaining of pain or of impaired functioning of the organism as a whole or in part. In our opinion, the existence of foci of infection may be passed over when the patient's life phenomena are normal, when he feels well, and when his energy is at par, but when he has lost his "pep" and his life processes run wrong, in the absence of a tangible, workable etiology, we should advise the removal of evident foci of infection if for no other reason than that the patient be given the advantage of a lighter load. The extra load of a focal infection should not be underestimated, even in combating disease of known etiology. We have repeatedly been impressed by the acceleration of antiluetic cures by removal of the excess load placed on the patient by diseased tonsils or teeth.

Deductions from clinical experiments are notoriously fallacious. Several methods of therapy are usually applied simultaneously and sufficient credit is not allotted to rest, change of scene, and better hygiene. In our efforts to determine the value of the removal of infections as a therapeutic procedure, we have endeavored to stabilize environmental and other therapeutic conditions before attacking the focus. We have tried to determine the norm of the patient under the conditions of the experiment before the experiment was carried out. The patients have nearly always been subjected for a time to a fixed hospital regime before operation. The technique of the clinical experiment is another variable that must be accurately controlled. For a satisfactory experiment, the technique must be adequate. The technique of tonsillectomy has been perfected. Those of nasal and buccal infections are yet deficient. We wish to present as a corollary to this paper, a technique that satisfies the demands of a satisfactory experiment for the removal of alveolar infection. This technique of external alveolectomy was applied seventeen years ago by Dr. Wm. L. Shearer, of Omaha, who has been closely associated with us in our work on mouth infections, to the superior maxilla for cosmetic purposes, because it facilitated the fitting of pleasing dentures in cases where the upper jaw was unduly prominent. In attempts at removal of infection with a curette, we were early impressed with the fallacy of this "working in the dark" method and with the prolonged suppuration and retarded healing of the curetted sockets. Removal of the external alveolar plate after thorough curettement convinced us of the unlikelihood of complete removal of extensive infections by the curette. Therefore, the operation of alveolectomy was applied as a routine procedure in infections of the alveolar processes in the following manner: The teeth are removed, the muco-periosteum is dissected up to the root ends of the teeth, the external alveolar plate is taken off, then the diseased tissue is attended to under the eye, the bone smoothed down, and the lingual and buccal gingival mucosae trimmed and sutured with horse hair. Healing, much to our surprise, has been almost entirely by primary union, febrile reactions have been practically eliminated, and the greater comfort of the patients following this procedure has been almost unbelievable. Furthermore, the technique permits of the clearing up of an entire alveolar process at one sitting without fear of postoperative reaction.

Failures to obtain desired therapeutic results must of necessity be many, though such failures do not invalidate the theory. So many variables enter into the count that it is surprising that we come off as well as we do in the present defective state of our knowledge. We must often choose one focus for attack from the several which exist, and we never can be sure that we are selecting the right one. We cannot be at all sure of complete removal of the focus except in the case of tonsils (and in the mouth if a satisfactory alveolectomy is done). Standardized techniques for complete removal of sinus and mouth pathology are yet to come. Secondary foci can always function as primary subfocal infection; for example, a latent gallbladder or an infected joint. Finally, when we have destroyed the primary focus, we have only eliminated the source from which reinforcements are drawn; the army of invasion is still to be destroyed by the defences of the patient. It is a game in which the patient must take his chances. In many instances I am accustomed to advise the removal of foci as a justifiable experiment, explaining to the patient the alternatives and the uncertainties, and putting it up to him as to whether he will gamble or no.

CONCLUSIONS.

(1) The principles of focal infection are loosely applicable to such conditions as neurasthenia, fag, hypertension, and vertigo.

(2) The excess load factor has not been sufficiently emphasized in our conceptions of focal infection.

(3) Effort should be made to so control our therapeutic applications of the principles

of focal infection that they conform to valid experimental procedure.

(4) In removal of mouth infections external alveolectomy is the technique of choice.

BIBLIOGRAPHY.

1. Fitz, Reginald. Mayo Clinics, Vol. 13, p. 266.
2. Shambaugh, Geo. E., M. D. Primary Diseases of the Labyrinth as the Result of Focal Infection. Annals of Otology, Rhinology and Laryngology, Vol. XXVI., September, 1917.

SUPRAPUBIC AND PERINEAL PROSTATECTOMY, THE ADVANTAGES OF EACH.*

Edwin Davis, M. D., F. A. C. S., Omaha, Neb.

Prostatectomy at the present time is a procedure attended with very little risk. This statement cannot be made entirely without reservation, for it assumes accuracy in diagnosis, and clear-cut indication for operation; and it likewise assumes proper operative technique, and, particularly, adequate preoperative preparation. Under these favorable circumstances, it may also be said of prostatectomy that good functional results are to be expected. In other words, present day diagnostic, pre-operative, and operative methods can give the patient a fairly safe assurance of recovery, with a restoration of the normal function of urination.

It is a conservative estimate to state that in the better clinics the present mortality of prostatectomy should fall lower than five per cent. This figure may be further reduced, and the percentage of good functional results increased, by a careful selection of the method or route of operation best adapted to fit the needs of each individual case. Volumes have been written concerning the relative merits of suprapubic and perineal prostatectomy. Furthermore, it is to be noted that much of this literature strongly favors either one of these methods, to the entire discredit of the other, and therefore obviously does not represent the opinions of unprejudiced observers.

We may assume that the majority of hypertrophied prostates (eighty per cent, or more) may be removed with equal facility and with equal safety, by either the suprapubic or the perineal route, provided the operator is equally skilled in either method. There will then remain a small percentage (twenty per cent, or less) in which, for reasons peculiar to the individual case, one or the other method may give better promise of a successful operative result. The following paper is not intended to favor either suprapubic or perineal prostatectomy, but includes merely a systematic unbiased discussion of the advantages, and disadvantages of each, together with a consideration of the various factors which should influence one in a decision as to the method best adapted to meet the peculiarities of the given individual patient.

SUPRAPUBIC ADVANTAGES.

RELATIVE TECHNICAL DIFFICULTY. Without question, the perineal approach is the more difficult. It should be noted that the term perineal prostatectomy, as here used, does not refer to blind intra-urethral enucleation through a median perineal incision. The only type of perineal operation under consideration is the complete dissection described by Young, involving exposure of the membranous urethra and the posterior surface of the prostate, followed by enucleation of the obstructing lobes under direct visual control. The successful perineal operation essentially requires preservation of an intact triangular ligament and external sphincter, and an intact rectal wall. Injury of the former structures may result in incontinence, while a rectal tear will almost inevitably result in that most serious and distressing complication, urethro-rectal fistula. The exceedingly close proximity of rectum and membranous urethra, and the ease of rectal injury, is fully appreciated only by those who have had occasion to see this accident occur. Urethrorectal fistula is without question, a menace. Yet, in the hands of the skilled perineal operator, its occurrence is almost unknown. Furthermore, recent publications (Young & Stone(1), Davis(2), have shown that the repair of urethro-rectal fistula may be successfully accomplished.

The suprapubic approach, on the other hand, is relatively simple; in fact, there is but little possible damage to adjacent structures. A recognized peritoneal tear, may be easily closed without fear of complication. It is therefore distinctly advisable that one not entirely familiar with the anatomy of the perineum, and with the dangers incident to sphincter damage and rectal injury should undertake no operation but the suprapubic. Herein lies the chief advantage of the suprapubic route.

---

*From the Department of Urology, University of Nebraska College of Medicine.

VESICAL COMPLICATIONS. Unless there is distinct contraindication, prostatectomy should be preceded by cystoscopy, for the reason that to be aware of existing vesical complications is to be prepared to meet them. This is particularly true where the perineal route is contemplated, and, in a general way, it therefore follows that any contraindication to cystoscopy is an indication for the suprapubic route.

Of vesical complications, calculus-formation is the most frequent. Ordinarily, calculi may be removed with equal facility via either route. The suprapubic operation is indicated, however, if there is one exceedingly large stone or if there are multiple very small stones.

Bladder tumor is not a frequent complication, yet may exist together with prostatic hypertrophy. A complicating diagnosis of bladder tumor is, of course, a contraindication to the perineal approach.

It has come to be recognized that bladder diverticulum is a condition which is not unusual, and which is more readily discovered through the cystoscope than by inspection of the collapsed bladder at cystotomy. Judd(3) has pointed out that the continuation of symptoms following prostatectomy in the presence of a diverticulum may be the result of the residual urine and the infection for which the diverticulum is primarily responsible. Diverticulectomy is therefore advisable together with prostatectomy; and the presence of this complication is an indication for the suprapubic route.

CATHETER INTOLERANCE. It is recognized that under no circumstances is prostatectomy an operation of emergency. Although we are not here primarily concerned with a discussion of the necessity of adequate preliminary bladder drainage, this subject is often an important factor in determining the route of operation. It is often that pre-operative preparation must necessarily continue for a period of weeks—sometimes for months—depending upon the amount and duration of residual urine, with resulting impairment of renal function. The three available methods of bladder drainage are (1) interval catheterization, (2) retained catheter and (3) suprapubic cystostomy. In the unusual case, the urethra is intolerant to repeated catheterization, or the retention catheter is not well borne. For this reason, suprapubic drainage may become necessary, and here, unless otherwise contraindicated, the two stage suprapubic operation should be performed because of the existing incision. In this respect, the "intolerant urethra" constitutes an indication for suprapubic prostatectomy.

PERINEAL SCAR. The danger and the ease of rectal injury has been elsewhere emphasized. Existing scar tissue in the region of the posterior bulbous or membranous urethra, whether it may have resulted from previous operation, from urinary extravasation, from abscess of Cowper's gland, or from ischiorectal abscess, adds to the risk of perineal approach to the prostate, and thus constitutes an indication for the route above.

ANKYLOSIS OF THE HIP OR SPINE. An unsatisfactory position of the patient upon the operating table is not unfrequently responsible for the failure of the operator to obtain an adequate exposure of the prostate through the perineum. Ankylosis of the hip or spine, or any other deformity interfering with maintaining the patient in the proper lithotomy position, is therefore an indication for the suprapubic route.

INTRA-VESICAL HYPERTROPHY. In a general way, it may be said of prostatectomy that the ease of enucleation increases with the size of the gland. The large trilobular hypertrophy, consisting of two laterals and a median, which has dilated the internal sphincter and which occupies an intravesical position, may usually be shelled out via the suprapubic route with the greatest of ease. It is to this type of enlargement that the suprapubic route is particularly adapted. There are however, types of large hypertrophy which remain entirely confined below the undilated sphincter, and which are not so readily accessible. For a clearer idea of the varying types of prostatic enlargement, we are indebted to Randall(4), who has made a detailed study of a large series of autopsy specimens. While in some instances the growth assumes an intravesical position by dilating the internal sphincter, in others the enlargement comes to assume a sub-trigonal position.

POSTOPERATIVE INCONTINENCE. Complete and permanent incontinence after either operation, properly performed, is very rare. Partial, temporary incontinence, continuing for a period of a few weeks or a few months, and characterized by leakage at the time of coughing or undue exertion, is not to be confused with complete and permanent lack of sphincter control. Temporary postoperative incapacity of the internal sphincter, resulting from a stretching of this structure by the intravesical growth, is not to be avoided by either operative method. In fact the size of the intravesical hypertrophy may sometimes be such as to permanently incapacitate the internal sphincter. Urinary control is therefore (usually temporarily and sometimes permanently) dependent upon the external sphincter, and the importance of preserving this structure intact is therefore obvious. That the external sphincter is able to function competently in this respect, has been repeatedly observed in cases of dilated internal sphincter incident to lesions of the spinal cord.

That incontinence should follow blind intra-urethral enucleation of the prostate through a median perineal incision, with destruction of the external sphincter, should not reflect to the discredit of the Young operation, properly performed. It will be recalled that the Young operation involves exposure and incision of the membranous urethra prior to the insertion of the prostatic tractor; and it is admitted by those who advocate this procedure that at this time there may occur injury of the external sphincter resulting in a temporary disturbance of urinary control. To avoid this possibility, Geraghty(5) and Cecil have recently independently suggested modifications of the Young technique whereby the operation is performed without exposure of the membranous urethra.

With respect to the question of incontinence, the suprapubic route therefore has the advantage, since faulty urinary control is rarely noted after this operation; regardless of the size of the gland.

PERINEAL ADVANTAGES.

SMALL FIBROUS HYPERTROPHY. The obstructing prostate is composed of both adenomatous and fibrous elements, the former usually predominating. It may be said that as the relative amount of fibrous tissue increases, so does the difficulty of enucleation increase. The type of gland in which the fibrous elements predominate affords one of the most difficult problems of suprapubic surgery, and constitutes a distinct indication for the perineal route. This statement is duly appreciated by those who have had occasion to "dig" out with the finger through a suprapubic incision, one of these small, sclerotic, adherent prostates. The perineal approach is here of advantage because there is afforded the opportunity of careful accurate dissection under direct visual control.

POSTOPERATIVE SHOCK AND ABDOMINAL DISTENTION. It is recognized that following various perineal operations, even though extensive and time consuming, there is surprisingly little shock and abdominal distention. In fact, abdominal complications after perineal operations occur so seldom as to require no consideration here. This statement may be illustrated by referring to the extensive dissection often necessary in cases of perineal fistula; yet the patient's convalescence is smooth and uneventful. Observation of the postoperative course of a large number of cases of perineal prostatectomy cannot but lead one to the conclusion that the danger of abdominal complication is negligible.

On the other hand, adynamic ileus may occur after any abdominal operation; and suprapubic cystotomy is no exception to this rule. Following such a simple rapid procedure as cystotomy for stone, though peritoneum remain intact and prostate be not disturbed, this complication may very seriously interfere with convalescence. That the opening of the peritoneum is not the essential causative factor is further shown by the frequent occurrence of paralytic ileus following nephrectomy.

The relatively infrequent occurrence of postoperative shock and abdominal complications following perineal prostatectomy constitutes one of the most substantial arguments in favor of this procedure.

LOCAL INFECTION. Dependent drainage is a distinct advantage. Infection in the space of Retzius and in the fatty layer of the abdominal wall, resulting in a widespread, sloughing incision, is a frequent cause of protracted convalescence. Septic absorption from this area may even be a factor in the mortality rate, and is observed particularly with obese individuals. Such sloughing infections do not occur in the perineum. Cecil(6) has advanced a theory to explain the lessened virulence of perineal infections on the basis of localized immunity. He argues that, "A Neisserian infection may affect the urethra but rarely affects the bladder. Tuberculosis may affect the kidney and ureters and bladder, but rarely affects the urethra, and it is just as definite that the suprapubic space is immensely more susceptible to infection and corresponding absorption than is the perineum." Whether this fact is due to "localized immunity" or dependent drainage, the perineal advantage in this respect is not open to question.

HEMORRHAGE. Post-prostatectomy hemorrhage is always a possibility, and in this respect constitutes a serious menace, and is a source of worry to the surgeon during the first few postoperative days. To those who have had the opportunity of observing the postoperative course of a large number of both types of case, it is apparent that the danger of hemorrhage is much less after the perineal operation. It was the privilege of the writer to spend three years as an assistant in a clinic where only suprapubic operations were done; and, immediately following this, another period of three years in a perineal clinic. Although the perineal series was much the larger, in no instance during this three-year period did postoperative hemorrhage necessitate re-packing. Figures are not available, but suffice it to say, no such record was maintained by the suprapubic series. The reasons for the advantage of the perineal operation in this respect are: (1) That this procedure necessitates less blind trauma, and (2) The packing may be more carefully and accurately applied and is better retained in place.

CARCINOMA. Benign hypertrophy and carcinoma not infrequently coexist in the same individual. For all practical purposes, it may be said that carcinoma originates only in the so-called posterior capsule, which term is here used to indicate, not the true fibrous capsule, but the thin wedge or lamella of glandular tissue, lying posterior to the ejaculatory ducts. This is the portion of the prostate with which the examining finger in the rectum comes in contact, and through which the two lateral lobes are palpated. Emphasis is to be laid upon the fact that this "carcinoma-bearing" posterior capsule is inaccessible by the suprapubic approach, and therefore the only possibility of excision of early carcinoma is afforded by the perineal route. Suprapubically, the obstructing lateral or median lobes may be enucleated, and the patient relieved of his immediate symptoms, but the carcinoma remains. Perineally, the posterior capsule may be exposed and plainly viewed, and frozen sections of suspicious areas made if necessary. Portions or all of the posterior capsule may be excised, or, if indicated, the complete radical operation of Young may be performed, removing prostate with its posterior capsule in toto, together with seminal vesicles, ejaculatory ducts, internal sphincter, and a portion of the trigone. Young has reported lasting cures after this radical procedure, with preservation of urinary control even after excision of the internal sphincter. The number of cases permitting simple excision of small carcinomatous nodules in the posterior capsule is necessarily small, but should be increasingly great as the profession comes to realize the significance of small localized areas of induration in the prostates of patients past middle age. The appalling relative frequency of carcinoma and benign hypertrophy (one in five), based upon accurate statistics from urological clinics, further emphasizes the importance of rectal examination as an essential part of all general physical examinations. Although these figures are not generally accepted by the surgical profession, there can be no question that in 20% of patients presenting themselves at urological clinics with symptoms of prostatic obstruction, the gland is carcinomatous. The great difficulty in diagnosis lies in the fact that excisable prostatic carcinomata are usually symptomless. A suspicion therefore, constitutes a perineal indication.

EXISTING INGUINAL HERNIA. The patient may be an habitual, satisfied truss-wearer, with a prejudice against herniotomy, or the operation may be for various reasons contraindicated. Obviously, the perineal incision is of advantage here, particularly if the hernia is of such a size as to require constant application of the truss while the patient is in the recumbent position, and while the urinary drainage is being taken care of with suprapubic dressings. Other factors being equal, the presence of an inguinal hernia is a distinct indication for the perineal route.

POSTOPERATIVE SUPRAPUBIC HERNIA. The occurrence of local suppuration in the suprapubic tissues may not only delay convalescence, but may result in the development of a mid-line hernia in later months. This condition is seen in patients from the better clinics, and is in no way a reflection upon the surgeon or upon the method of closure, since local acute suppuration often necessitates the removal of sutures. The perineal route, of course, rules out the possibility of hernia.

SUPRAPUBIC SCAR. As pointed out above, the presence of scar tissue in the perineum, is an indication for the suprapubic route. The converse is likewise true. To perform a cystotomy through a suprapubic scar without opening into the peritoneal cavity is tedious and time-consuming at best, and frequently is not possible. While it is generally admitted that this complication is without ill result if the peritoneal tear be recognized and closed, yet it seems more logical to avoid difficult dissection and to save time by choosing the other route. Other factors being equal, the presence of suprapubic scar tissue is therefore an indication for the perineal route.

URINARY DRAINAGE. Following perineal prostatectomy, the urine, to obtain an exit from the bladder, must pass first through the internal sphincter into the prostatic cavity, hence through the incised posterior capsule and into the fistulous tract. After a certain number of postoperative days, varying from one to perhaps ten, depending upon the degree of stretching of the internal sphincter by the growth, the internal sphincter begins to regain its tone, and the patient establishes intervals of urination under voluntary control. Thus, during the interval, while the perineal fistula is granulating, although the patient does not void through the urethra, he is able to void through the fistula, in the sense that the act is under voluntary control. In this respect he is not entirely dependent upon dressings, as is the suprapubic patient. Perineal prostatectomy is therefore an economy to the hospital, in that the internal sphincter aids in lessening the nursing care and the volume of dressings necessary.

SURGICAL DISSECTION. The perineal operation is not a blind enucleation dependent upon tactile sensation only. It is essentially a surgical procedure in that opportunity for careful and accurate dissection is afforded, under direct visual control, with less trauma and less tearing. In this respect the perineal route possesses an advantage over the suprapubic.

MISCELLANEOUS.

FISTULA. That there will occur a certain small percentage of urinary fistulae, persisting several months or longer after either the perineal or suprapubic route of approach, is to the discredit of neither operation. Following the suprapubic operation, this occurrence is sometimes an indication of incomplete removal of obstruction, or it may be the first hint to the surgeon of overlooked carcinoma. It is the common opinion that long-standing or permanent perineal fistulae are frequent. Yet these do not occur after Young's operation, properly performed. Cecil has recently reported one hundred consecutive cases of perineal prostatectomy with no case of permanent fistula. In five per cent of Cecil's cases, the wound closed before the nineth day; in twenty-two per cent before the fourteenth day; in fifty-one per cent, before the nineteenth day; in seventy-four per cent, before the twenty-fourth day; and in ninety per cent before the thirty-fourth day. One case remained open for one hundred and thirty-three days. In view of this record, it is logical to assume that perineal fistulae are due to the operator, not to the operation. Cecil considers that to open the urethra, "not in its membranous portion, but far out or high up in the urethra where there is little depth," tends toward the formation of fistulae. The occasional simple fistula does not constitute a serious objection to either operation.

EPIDIDYMITIS. The postoperative occurrence of this complication in a certain percentage of cases (at least ten per cent) is not to be prevented. There are no available figures to prove that the frequency of epididymitis is dependent upon the route of approach.

SEXUAL FUNCTION. This may or may not be retained after either operation, and is dependent upon factors other than operative technique.

SUMMARY.

SUPRAPUBIC. The technique of suprapubic approach to the prostate is relatively much simpler, and the double menace of urethrorectal fistula and urinary incontinence does not confront the operator.

Vesical complications (stone, tumor, diverticulum) may be more readily handled with the bladder open to inspection.

In cases of "catheter intolerance," encountered during pre-operative preparation, the two stages suprapubic operation is of great advantage.

Perineal scar tissue or any bony deformity (hip or spine) preventing proper lithotomy position, are suprapubic indications.

Intravesical enlargement may be more readily enucleated by the suprapubic route.

PERINEAL. The perineal exposure is of advantage in removing the small, fibrous adherent prostate.

After the perineal operation, there is less danger of postoperative shock, abdominal distention, hemorrhage and local sepsis, each of which is a factor in the mortality rate.

The opportunity for excision of early carcinoma is afforded by the perineal route.

Existing inguinal hernia is a perineal indication.

The possibility of postoperative suprapubic hernia is eliminated by the perineal route.

Suprapubic scar tissue is a perineal indication.

After recovery of tone of stretched internal sphincter the urinary drainage comes to be under voluntary control, even before the perineal fistula closes.

The perineal operator is aided by the sense of sight, as well as by the sense of touch.

Conclusion. Neither the perineal nor the suprapubic route should be advocated to the complete exclusion of the other. The interests of the patient may be better served if the decision as to the method best adapted to fit the needs of the individual case be reached by a consideration of the above factors. It does not seem wholly logical or fair to the patient that the choice of the method of operation should depend upon technical difficulties involved.

REFERENCES.

(1) Young, H. H.. and Stone, H. B.: The Operative Treatment of Urethro-rectal Fistula: A Radical Cure. Jour. Urol., 1917, 1, 270.

(2) Davis, Edwin: The Young-Stone Operation for Urethro-rectal Fistula. Surg. Gyn., and Obst., March, 1921, 225.

(3) Judd, E. S.: Diverticula of the Bladder. Mayo Clinics, 1918, X, 322.

(4) Randall, Alex.: The Varying Types of Prostatic Obstruction, 1921, 5, 287.

(5) Geraghty, J. T.:A New Method of Perineal Prostatectomy Which Insures More Perfect Functional Results. Jour. Urol.. 1922, 8, 339.

(6) Cecil, Arthur B.: Perineal Prostatectomy. A Detailed Study of one hundred Consecutive Cases., Jour. Urol., 1922, 6, 399.

MEDICAL LEGISLATION, THE PUBLIC AND THE DOCTOR.*

W. H. Wilson, M. D., Lincoln, Neb.

I have been impelled to use this subject for two principal reasons: First, it occurred to me that inasmuch as our meetings are almost entirely devoted to scientific and technical papers, reporting and discussing interesting cases, it might be well to have something of this nature as a diversion; Second, I have read in the medical journals within recent months excoriating criticism of the medical profession for its failure to educate the laity, implying that such failure is largely responsible for the passage of laws allowing certain cults to practice so-called healing arts. I felt that such broad and unqualified charges should not go entirely unchallenged; hence this talk.

I assert, and challenge successful contradiction, that practically all laws for the regulation of the practice of medicine and requirements for increasingly higher qualifications in the practice, laws of sanitation, quarantine and preventive medicine, both state and national, have emanated from, been fostered by and through the efforts of the medical profession crystallized into law, and written upon the statute books. It is further asserted that law of itself is educational, and that the efforts necessary to procure the passage of the laws is decidedly educative to the public. That medical legislation in Nebraska has been accomplished by the medical profession let the facts prove.

From the time Nebraska was organized as a territory up to the time it was fourteen years old as a state, it had no medical laws of any kind, and anyone who had the nerve could call himself "doctor" and prey upon the credulity of the sick and afflicted. Gradually there were many so engaged in the state. With the passing of the years and legislation in the older states driving out the quacks and charlatans, naturally Nebraska got her full share of them, so that the state would soon have been overrun with quacks and charlatans plying the healing art, had a barrier not been raised. The medical profession of the state at that time called public attention to this danger. It prepared a bill to meet the conditions and went to the legislature in 1881 and got the measure enacted into law. This first law regulating the practice of medicine provided—First, that all persons holding a diploma from a legally chartered medical school could register this diploma with the county clerk, and receive a certificate to practice; Second—All comers thereafter were required to have a diploma; Third—Anyone having attended one course of lectures in a chartered medical college and having practiced in the state three years could register and receive a certificate; Fourth—Those who had been engaged in practice for a living continuously for ten years, the last two having been in this state, could register. This law may now seem rather crude, but for the times was a good beginning and made a foundation on which to build.

Ten years elapsed before additional legislation was enacted. Then the different elements of the profession got together and decided that for the public good and the interest of professional advancement the state should have a state board of health and the standards of practice be raised. A measure to this end was presented to the legislature and secured enactment into law in 1891. It provided for a state board of health composed of the governor, attorney general, and superintendent of public instruction. Owing to the provisions of the constitution, it had to be composed of state officers. It provided that the board should appoint four medical men of at least seven years practice, to be known as secretaries, to act for the board and in reality to be the de facto board of health. Two of such secretaries were required to be of the regular school of practice, one of the eclectic and one of the homeopathic schools. The law repealed the practice act of 1881 and provided that all newcomers must possess a diploma from a legally chartered medical college requiring three terms of lectures of nine months each, and submit their credentials to be passed upon by the secretaries of the state board of health.

---

*Abstract of an informal talk given before the Lancaster County Medical Society, October 21, 1922.

Again in 1897 the profession went to the legislature and asked to have its qualifications raised still higher by requiring applicants for a license to practice, to hold a diploma from a medical college of standing, requiring a four year graded course of nine months each. The request was granted and the law was amended.

In 1899 the osteopaths made a strong plea to the legislature to pass a bill legalizing them to practice, but the medical profession, in what it believed the interests of the public, was able to convince the lawmakers that the bill should not be passed. Two years later the effort was again made with greatly renewed vigor. The medical profession made a gallant stand against the bill in the interests of the public weal and scientific medicine, but the bill was enacted into law. The law limited the practice, as was requested by the osteopaths, to a drugless healing. It required the applicant for license to practice to hold a diploma from a legally chartered osteopathic school. This and other credentials were required to be submitted to the state board of health to receive a certificate for practice.

As early as 1902 the medical profession took cognizance of the fact that medical colleges having become so numerous and competition for students so great, there was a tendency of some schools to graduate students who were rather poorly qualified. To meet this contingency representatives of the profession, through a medical man* then a member of the house of representatives, passed a bill creating the state board of health an examining board, thereby assuring the public of higher qualifications in its practitioners. At that session, at the instance of the medical profession, the above mentioned member put a bill through both house and senate for forming a more uniform standard of qualification for all who were engaged in the healing art, exempting drugless healers from qualifying in materia medica and surgery, but this bill was vetoed by the governor. At that session a bill was also passed giving the state board of health sweeping powers in the matter of quarantine and sanitation throughout the state, and providing for the appointment of a state health inspector. That was an important step taken in preventive medicine.

In 1905 the same medical man*, again a member of the house, at the instance of the state board of health and representatives of the profession, put through a bill creating the state board of health registrar of vital statistics, and as a result of that act a movement was started which eventually put Nebraska in the United States registration area. Aside from its record and commercial value to the laity, it was an important step toward laying the foundation for scientific preventive medicine.

In 1907 the osteopaths made a powerful effort to have the legislature grant them a state board of their own. The state board of health and leading members of the medical profession just as strenuously opposed the passage of the measure. The medical man* who had previously been a member of the house was at that time a member of the state senate, and led the fight against the passage of the measure. The osteopathic leaders came to him and offered to compromise and stop the fight if they were given representation on the state board of health. The senator believed it wise to accept, and so advised other medical workers, arguing that while the bill could be defeated, it only meant postponement, as the fight would undoubtedly be made at a later session, and probably with success. The advice did not meet with favor, the fight was made, and the bill killed.

---

*The Author—(Editor).

Two years later the effort was on again, the same compromise offered, the same advice given, and again refused by the other workers, and at that time all workers had the disadvantage of having to work from the outside, with the result that the osteopaths won and got their separate board. It seems to me even at this late date that a mistake was made in not accepting the proferred compromise, and holding the control of medical practice under one board.

In 1911 and again in 1913 the chiropractors made vigorous efforts to have the legislature legalize their practice, but representative members of the medical profession were able to convince lawmakers that the theory of disease entertained by the cult was erroneous and that they were wholly unqualified to be entrusted with the health of the people. In 1915 the chiropractors were again in evidence with their bill for legalization, armed with seemingly ample funds to pay skilled lobbyists. Their bill was enacted into law notwithstanding vigorous efforts made by the medical profession, but the bill was materially amended, so that when passed it required the attendance at a chiropractic school requiring three years of nine months each. It is a question if this improves the quality much, but it does lessen the quantity.

In 1916 Dr. E. W. Rowe, then president of the State Medical Association, inaugurated a movement for the creation of a real state health department, which movement was endorsed quite generally by members of the profession. The governor was appealed to and he requested the United States Public Health Service to send a man to make a survey of the state. Dr. Carrol Fox from the Public Health Service was sent and put in some two months in such survey. He submitted plans and recommendations. Using his recommendations as a basis, a bill was drafted providing for a very complete and modern health department, and continuing without material change the medical examining board. At the legislative session of 1917 this measure was submitted to the legislature, and after energetic efforts on the part of the medical profession, enacted into law. The legislative session of 1919 carried over into the Department of Public Welfare, under the code law, all laws bearing on medicine and public health. During that session the osteopaths had their law rewritten and materially liberalized from a law providing for drugless and manipulating practice exclusively to one which permits the use of certain drugs and the practice of surgery. To a candid mind it may seem difficult to make excuse for the continuation of a separate law and board for a practice which permits almost everything in which the profession engages.

This, in brief, is an outline of medical legislation in Nebraska. True, it may not be all that might have been desired, but certainly it is creditable to the profession and of inestimable value to the public in the way of giving it high class service and information of an educational nature in regulating its health generally. I believe it beyond the realms of possibility so to educate the laity that a portion of it, at least, will not continue to seek after some cure-all. So long as sickness, suffering and death contine, just that long will there be a reaching after a cure-all and no amount of attempted education of such public by the profession can prevent it. I am of the opinion, however, that the profession in the future, as in the past, will continue its altruistic attitude toward the public and spend and be spent in serving and educating the public in the matters of health.

In conclusion, I suggest that the profession should put up a forceful drive for the abolition of the several state boards now in control of the practice of the healing art in this state, and the creation of one central board for that purpose. I believe it can be accomplished if the profession makes a united, earnest effort and pursues a high and liberal attitude toward the other factions practicing the healing art within the state.

TWENTIETH CENTURY OBSTETRICS — A CRITICISM.*

A. B. Somers, M. D., Omaha, Nebraska.

Dr. Evans of Chicago says in a recent article, "If any one will take the trouble to look the matter up in the report of the censor's office he will find that getting born is a very dangerous business. Dangerous to child, and dangerous to mother. If we add together the stillbirths, the born dead, the fetal birth accidents the deaths the first week of life, and then add to this the deaths of mothers in childbirth, the total will surpass the figure which marks the present resting place of consumption, a disease which is losing importance yearly."

---

*Read before the Nebraska State Medical Assn.; Omaha, April 24, 1922.

On the other hand, while the great plague is losing its importance yearly, the mortality from childbirth has been somewhat steadily increasing in this country during the present century. Evidence has come out in the recent investigations, relative to the demand for the Shepard-Towner bill, that our maternal and infantile death rate during the period of pregnancy and childbirth is larger than that of any other country in the world that calls itself civilized. Our women have twice as large a death rate at childbirth as do the women of England and Wales. The Metropolitan Life Insurance Company, which does a large industrial insurance work among the laboring classes, has been calling attention to the fact that puerperal mortality is on the increase and asks why. We all understand that puerperal mortality was very materially increased during the three years when influenza was prevalent but, aside from this increase due to influenza and not a part of it, the increased mortality goes on.

Dr. DeLee of Chicago has come to the conclusion that the doctor must look at childbirth as a pathological process rather than a natural process if he is to give good service. Is this true as it applies to the United States of America and not true as it applies to the other countries of the civilized world? Is there not some underlying reason for this great and increasing mortality in our country as compared with other civilized countries? If so, what? Is it due to some inherent disability of our women as a whole, or to some other cause? This defect, if it be a defect, does not apply wholly to our native American women, but to the foreign born women that come to us from other shores, as evidenced by the Metropolitan Life Insurance Company's statistics.

Is Dr. DeLee right, or only half right, in his statement? Will the phenomenal success of our lying-in institutions, throughout our large cities, including Dr. DeLee's institution in Chicago, justify the statement? If so, then the only place to be born is in a well ordered institution in the hands of an expert, and it is time for us to get busy and train a generation or two of physiological women. Carlisle said "The time to begin the training of a child is one hundred years before it is born." Perhaps Dr. DeLee is right and it is a primary duty with the present generation to train a generation of women that can fulfill the reproductive function successfully. I surmise, however, that Dr. DeLee is only half right and that our child bearing women are not a generation of pathological monstrosities, but real physiological women with some imperfections. If so, we must look farther for cause or causes.

Dr. Polak of New York in an article in the American Medical Association Journal, June 25, 1921, as authority gave this statement, "That the number of women who die from childbirth is increasing from year to year and that puerperal septicemia seems to be the only form of wound infection the occurrence of which has remained totally unaffected by the advancement of scientific knowledge in the past decade. In New York City, on the island of Manhattan last year (1920), one mother died for every 205 babies born, while in the greater city of New York, one woman in every 250 deliveries died from infection or as an indirect result of it. The mortality from puerperal infection remains practically the same today as it was in 1900; and the mortality from childbirth is second only to that from tuberculosis in women of reproductive age, and between 40 and 50 percent of these deaths are due to sepsis. Furthermore, consider the fetal mortality: one baby out of every twenty-one is born dead, and one out of every twenty-six dies before it is a month old."

Dr. Polak further says, "More than 61 percent of all gynecologic surgery is the direct result of poor obstetric practice. This great wastage of human life, this consequent invalidism in those who survive their infection and trauma is absolutely preventable; hence I feel that this subject is worthy of consideration by such a representative body as this." So much for New York City, 1920.

This wastage of human life does not occur in well managed obstetric clinics, where the patient is given the benefit of proper and painstaking prenatal care and good obstetric judgment, hence we must look otherwhere for this great mortality in the everyday obstetric practice.

Pregnancy and childbirth are a test of function the same as any of the more serious infectious diseases. For instance pneumonia, influenza, typhoid fever, rheumatism, etc., are tests of function. There is many an individual who will maintain a fair degree of health, showing no defect of any organ or condition that would bar him from passing the most rigid life insurance examination for our old line companies, and yet when it comes to some supreme test some vital organ fails as a result. It may be the heart, it may be the lungs. In pregnancy it often is the kidneys, the liver, the pancreas, or thyroid. And as a result of this failure, disaster follows.

My impression is that many of these cases have a poor heredity. That is, as a whole, the family history reveals comparatively short lives. Cases where the life insurance company will issue an endowment policy, but not a straight life policy. Such people, when they get seriously sick, die, no matter what their sickness may be. And the strain of pregnancy often brings dire results. This implies that it is necessary to have more efficient prenatal care in order that every woman may be brought to her highest degree of efficiency. Not only that, but that the first symptoms of failure of any important organ be recognized and intelligent treatment instituted at once. This means that every pregnant woman should report and put herself under the care of the most intelligent physician that is accessible to her, and that he should carefully watch her as often as once a month, or oftener if the case may require, for every defective functioning of the kidneys, the liver, the pancreas, the thyroids, or the heart and, with the first symptoms of defective action, establish remedial measures. If this was done by the great mass of American women who go to the average practitioner for care, I believe it would be one long step toward remedying this largely increasing mortality. This attitude of watchful expectancy on the part of the physician during the months before labor would put him in a position to give his patients more efficient care than they are getting at the present time, and, as a result, we would have fewer of the complications of labor due to the failure of important organs to fulfill their functions.

The twentieth century spirit in this dear land of ours is "get there" but this spirit does not work out to good advantage when applied to automobile driving and the practice of obstetrics. Our large list of automobile accidents demonstrates three things. First, there is a large percent of inefficient drivers, second, a large percent of all drivers are in undue haste, and third, a large disregard of the rules of the road. You may ask, how do you apply this to obstetric practice?

First, the average graduate has spent the major part of his time in the class room and the laboratory, instead of observing clinical cases. Possibly he has never attended a case of obstetrics except under direction. Almost without exception, he has not watched the progress of any obstetric case from early pregnancy until the end of the puerperal period. Suppose he takes a year interneship in one of our hospitals. His training in obstetrics is below par as compared with internal medicine, surgery, and the so-called specialties. The obstetric work in hospitals is not in the hands of trained specialists. As a matter of fact, obstetrics has not been raised to the dignity of a specialty outside of our large cities. As a result, the young men and women have not had an opportunity to rise above mediocrity in this important branch, unless they take postgraduate work in some big maternity, and, as a matter of fact, there are not maternities enough to give the training to all of our graduates, so the student is not altogether to blame for his lack of equipment. He has not had a chance. This defect becomes more glaring as the years go by for the simple reason that obstetrics has been very slow to get into the hands of trained men and experts as compared with other branches of medicine.

Second, we are in an everlasting hurry, and this hurry habit has developed the practice of pernicious activity rather than watchful expectancy. In many instances if we were in less haste we would make more speed, and certainly we would carry on with a far greater degree of safety. The success of modern surgery has seemed to stimulate a desire on the part of the general practitioner to do things quickly and have them over with. We go to a case of labor as if it were pathology instead of physiology. We pattern after our surgeon teachers instead of our internists, who have learned to watch and wait. We see some very striking illustrations of this in certain places. Dr. Reed of Chicago recommends induction of labor at full term by artificial dilatation of the cervix with conical bags. Dr. Potter of Buffalo advocates version as quickly as the cervix is dilated or dilatable. Dr. DeLee recommends episiotomy and forceps when the head reaches the pelvic floor. Other men recommend other operative processes in order to hasten matters and shorten the time of labor. These men will not admit that the shortness of the duration of labor is the specific cause for their management, and I am not going to argue the case one way or the other. We must remember, however, that these men are experts along certain lines, while the general practitioner is not even a trained man along any of the lines of obstetric work, and while it may be possible for any of these men to do safely any of the operations of obstetric surgery, it is not safe for the average man, either in the country or the city, to do safe work along any of these lines, and, as a result of haste without skill in this very large percentage of cases of confinement in the country at large, our mortality rates are increasing. The general practitioner has other duties he wishes to perform. He reads of the methods of these experts and says to himself, "why not I as well?" In a case with slow labor pains he says, "I will administer a little pituitrin and hasten matters in a degree. He forgets that all good obstetric authorities consider it dangerous to use pituitrin until the uterus is empty, and they have excellent reasons for such a decision. This is only a repetition of methods that were in use, in a degree, fifty or more years ago, when we used ergot instead of pituitrin. He looks the case over and says, "I can do a version and get through quickly, or I can apply forceps and save a lot of time." Here's where the art comes in. Doubtless Dr. Potter has developed the art of version to a higher degree than any other living man, and he is doing successfully what the average man can not do. Breech presentations have always been considered a menace to the life of the baby, and disastrous in a lesser degree to the mother's welfare, and it is extremely doubtful if any man can do versions in eighty per cent of his cases as safely to mother and child as the same man could carry on, doing versions only when they were especially indicated. Then again, the application of forceps is an art. First, it is important to know whether a child's head can be safely delivered with forceps. Or, in other words, if the proportions are right for forceps. Then too, it is necessary to decide whether the presentation and position are favorable for a forceps delivery. Then, it is important to know in what stage of the game forceps can be safely used, as there are too many tragedies following forceps operations. Too many practitioners think that about all that is necessary for a forceps delivery, is a head presentation, then to get an application of the forceps that will not slip, and terminate the labor by traction. In brief, apply the forceps and pull. He forgets that a forceps delivery is a more difficult operation than an abdominal section, and may result disastrously to either of the two patients, or to both, but in spite of this, many persons apply forceps when about 'he only thing that they think of, is getting the forceps applied and terminating the labor, safety being a secondary consideration.

Regarding induction of labor at term by artificial dilatation of the cervix. This sounds good and looks easy, when as a matter of fact, an induced labor is very likely to be an abnormal labor in all of its details. I recall a case where, according to our best reckonings, a woman had gone two weeks over time. A previous labor had been a tragedy and I was somewhat anxious. The cervix was dilated with conical bags, but labor would not come on after waiting a day. Bougies were used, and repeated after twenty-four hours. Labor began, but it was irregular and unsatisfactory, but finally, after a week's time, sufficient progress had been made so that I delivered a live child with forceps and we had no sepsis. Here was a case of a normal pelvis, a normal sized child, and the labor should have been normal only for primary inertia. I might have done a version, but I considered forceps delivery safer for the child than a version. What fool thing I might have done, if pituitrin had been in use, I don't know. Speaking of pituitrin, I have had some hair-breadth escapes from its use, when we began its use, originally in cc. doses. I have seen a fully dilated cervix close up by contraction of the circular fibers under its use, and ablatio placenta occur at the same time. All that saved a tragedy was multiple incisions of the cervix and prompt application of forceps. So much for undue haste. Experimentation may enlarge the field of usefulness of pituitrin as the years go by, but let us give the experts an opportunity to do the experimenting.

Third, either through ignorance or some other reason, we do not carefully observe the rules of the game. Eighty per cent of all our confinement cases would deliver themselves safely if given a chance under the care of a good nurse, and the vital question is, what to do with the twenty per cent class. Also, to decide very early, whether a woman belongs to the eighty per cent class or the twenty per cent class. Then, having decided this question, to decide methods. It may be a case requiring a Cesarean section at the very onset of labor. It may be desirable to do a version at the end of the first stage, or it may be a forceps case at some period of the second stage, either with or without episiotomy, according to the capacity of the vaginal outlet, where a tear is imminent and episiotomy is indicated, but there are some exceptions. The one exception that occurs to me is the vagina, so small, that the tear extends upwards two or three inches.

As a whole, I would treat pregnancy and childbirth as a physiological process. Ever bearing in mind that it is the supreme test of the physiology of a woman, and at any time physiology may fail and pathology result.

Midwifery is emergency work, and accidents may occur at any period of the process. Sepsis still claims the largest number of victims, and this is through no defect of the patient herself. I believe there is too much haste in obstetric practice, which frequently resolves itself into pernicious activity. I believe there are too many examinations and manipulations without due regard for aseptic technic. I believe there are too many operative deliveries that might safely be left to normal processes. I believe in more old fashioned waiting for a woman to do her best. I believe in the pain relieving agencies of the twentieth century, including morphin and ether, that come down to us from the middle of the nineteenth century. Morphin and scopolamin are a great boon to many a woman, but they can not be applied in every delivery, and they need to be used with brains. Gas is a great help in selected cases, and ether to the surgical degree as the head passes the outlet.

The cure for present conditions is more thoroughly trained men. Men up to the requirements of the twentieth century. Men who can and will give sufficient time, either themselves or by able assistants, to each individual case. We need more prenatal care, in order that we may know the defects of our cases, and teach a woman how to live with a great event in view. We need more well equipped maternities, accessible to every prospective mother. Every county, or group of counties, should have such an institution that could, by means of good roads and automobiles, reach out into the surrounding country and bring the women in. Every first pregnancy is a test of a woman's ability, and every primipara should have extra care during pregnancy, and be placed in an institution at the time of labor, and along with her, every woman with a defective history in previous labors. In brief, all the rest of them that might choose to go to a well regulated institution.

DISCUSSION.

Daisy Hanson, M. D., Lincoln: I am always glad to hear a paper on obstetrics at our state association, and especially such a good paper as Dr. Somers has given us. I have been attending the state meetings regularly for fifteen years, and it seems wrong there are so many fewer papers on obstetrics than on other topics. There certainly are more mothers and babies needing expert care than people with inflamed appendices, gall stones, and peptic ulcers, all added together. And there are more doctors among our members taking care of obstetrics than those engaged in the high priced specialties.

I am sure Dr. Somers was right when he said the cause of our increasing mortality is too much interference. I think it is partly the doctor's fault and partly the patient's. The doctor is in haste and wants to do something spectacular with a big fee attached, and he is catering to his wealthy patient's demands. Present day women are not made of the good stern stuff their grandmothers were, and as soon as the pains become hard, they begin to demand that we stop the pain and end the labor. I do not think it is because they are getting frail. I think they waste more nervous energy in card parties, fox trots, movies and joy rides than their grandmothers did in raising a large family and doing every bit of the work.

I do not want the women to suffer any more than they must, if we can relieve the suffering safely; but I have not yet found a fool proof anesthetic. It seems to me that is just what we need if we are to do obstetrics alone in the average home. We can use ether in the hands of a closely supervised relative during the delivery of the head. Chloroform I am always afraid of. Scopolamine I am also afraid of, after using it extensively in a Chicago hospital during interne days. I tried out gas quite thoroughly. In very tumultuous labor it seems not strong enough to control the situation, and we must turn to ether. When gas is put in the hands of a relative or a sympathetic nurse, she is likely to crowd it too far, and put the mother clear to sleep, and you have the baby born completely anesthetized, cyanotic, and making only feeble attempts to breathe, and you cannot induce a good, vigorous cry until the anesthetic has worn off.

In a recent number of the American Medical Journal, one man recommended spinal anesthesia, with procain as the ideal for obstetric use. In the same magazine, a Swiss reported fourteen fatalities from spinal anesthesia. I was interested and wrote Dr. Delmer Davis, of Omaha, who has used it a great deal in surgery, asking his opinion. He tells me he thinks it would not be good in obstetrical cases for two reasons: one, that it would deprive the patient of the ability to use her abdominal muscles; and second. the anesthesia does not last long, and it would be hard to get its maximum effect just when you wanted it.

I think there is another thing we must remember in lowering our obstetric mortality. If we make our obstetric fees and hospital fees so high only the wealthy can afford the treatment, we will not have a great effect on the mortality, because most of the babies are being born in poor and moderately well-to-do homes. The American Journal of Obstetrics recently advocated a treatment for pernicious vomiting in pregnancy, which I estimated would cost at least fifty dollars a day. To put a poor patient in the hospital and tell her you would carry on that treatment for several months at that expense, would end the case, so far as you were concerned.

I wonder whether specialists in obstetrics will help the situation very much. We have two kinds of specialists. One is the kind who is especially interested in one line of work and has had special training. The other kind is the man who looks around and says: "Where is there a good financial opening? I see. In obstetrics. Eureka! I am an obstetrician!" That will make the mortality rate worse instead of better.

There has been a great increase in the number of bad presentations especially occiput posterior cases, in the last few years. I have noticed it in my own practice, and two busy obstetricians whom I talked with recently—one of them Dr. Irving Potter of Buffalo, N. Y.—volunteered the same observation. I have a theory that this comes from the almost universal wearing of high heels by women of all classes, for the last 8 or 10 years, but I don't know just how to prove my theory. Often I have found it possible in these cases, by introducing the whole, gloved hand through the well dilated os, to turn the head to occiput anterior position, the left hand on the abdomen turning the shoulders in the same direction. Then if the child is held so until a few hard pains engage it in the easier position, the delivery is often prompt and easy. Sometimes, when the child is very large and completely fills the uterus, this cannot be done, and the bad position adds greatly to the suffering and danger of the delivery. When this minor change of position can be made, it has seemed to me much better than the complete version.

I am sorry it wasn't the doctors of the country who noticed the rising obstetric mortality, and worked for the Shepard-Towner bill with the big government appropriation to help correct it. Since we didn't have the honor of originating the movement. I wish that we might show our whole souled interest and cooperation by forming strong obstetrical sections in our state associations. Membership in these obstetrical sections should not be confined to the few wealthy and famous obstetricians of our country, and should not be intended mainly to confer honor on the members. It should include all doctors who are doing good obstetrics, whether their cases are few or many—all who are willing to study, sacrifice and work enthusiastically for better obstetrics and greater safety for mothers and babies.

I. H. Dillon, M. D., Lincoln: In Dr. Somers' paper he reported the maternal and infant deaths of several states. I wondered if he might be interested in those that occurred at home?

In 1920, out of approximately 30,500 births occurring in this state, 1995 of those children died before they reached their first birthday. To this you must also add approximately 800 children born dead. Of the maternal deaths, there were 169 occurring in the state. Of these, 58 mothers died from infection; 48 died from convulsions.

Quoting from figures from another source, these are not so bad, after all, in comparision with some of the other places of the United States, while they are appalling, and I have no doubt in the years to come can be greatly reduced.

Quoting from the testimony of Dr. Josephine Baker, of New York City, she said:

"The maternal deaths per ten thousand births in Boston was 70.71; in Baltimore, 64.89; in Philadelphia, 61.48; in New York City, after fifteen years' work along this line, 46.11; and in Nebraska, 54.9."

So we are lower than those other cities, and only a little higher than New York.

Quoting again from Dr. Josephine Baker, she said: "New York has reduced her infant mortality from 144 to 85 deaths per one thousand births." Nebraska had 64.9 per one thousand births in 1920.

I have been interested in the question of whether there was a difference in the infant mortality or in the maternal mortality in the different sections of the state. I spent my spare time for two or three days going over the tabulations to try to determine it. As nearly as I can figure out for 1920, with 10,000 births, there is practically no difference in infant and maternal mortality whether it be in Douglas county or the sand hills.

The Shepard-Towner bill was mentioned in Dr. Somers' paper. You might be interested in the communication that was received yesterday from Washington to the effect that the plans of the state of Nebraska have been accepted for the administration of that bill. It is too long a story to go into here, but we shall try to furnish the editor of the Journal with an abstract of those plans for publication at the earliest time he can use them.

C. P. Fall, M. D., Beatrice: There is one class of confinements that has practically disappeared. I refer to the old German woman who used to get breakfast in the morning and lie down and have her baby without much, if any assistance, and get up and get dinner. She did not need the service of a specialist.

Dr. Somers mentioned a good many things with relation to the cause of the high mortality rate in mothers and the increasing infants mortality rate, but he never mentioned the modern corset that the women are wearing today. The second stage of labor is completed by the abdominal muscles. The modern corset causes a pressure atrophy which weakens these muscles; consequently the woman must have mechanical assistance.

I regard any assistance necessarily fraught with danger. This and faulty infant feeding. in my judgment have as much to do with the increased mortality rate of both mother and infant as any other causes the author of the paper has mentioned.

Inez Philbrick, M. D., Lincoln: I have not yet completed my two thousand cases, but very nearly. I am going to continue in practice until I have. I think I know something about obstetrics.

I agree with Dr. Somers in much he has said, but not in all. In the first place, I believe in evolution —in spite of William Jennings Bryan and the Kentucky legislature! What we need in discussing the question of obstetrics is to study evolution a little bit.

First we had attendance upon women in childbirth by women untrained, because they had no opportunities to obtain training. They have been handicapped through the years in every line by lack of opportunity to obtain training. In spite of that fact, we have some very wonderful obstetricians among the untrained midwives, because in that day the eternal fitness of things was considered, and women attended women in confinement.

Then we had obstetrics passing to the untrained doctor.

Then we had attendance upon women by the trained man.

What we need is attendance upon women by trained women. Obstetrics is not a man's job. There would not be a man practicing obstetrics except that it has become a lucrative part of medical practice. As I say, what we need is to have trained women attending women in confinement. Why do I say that? Because in the evolution of the ages, men have acquired certain abilities, talents, and tastes. Women have acquired certain abilities, talents, and tastes. One of the abilities woman has attained is the ability to look after details. They have attained patience. They are able to work without a number of satellites handing them everything they are going to use.

As I often tell my men friends—and I have a few still—they would not be practicing surgery or obstetrics if it were not for the fact that there are women nurses to do all the work before and after. They collect the fees. Now that is my private opinion ,and no one else is responsible for it.

If I could come back to this earth in five hundred years, I think I should find trained women attending women in confinement, and these women salaried by the state so that the practice would not be commercialized—women, willing to go to the patient and wait, as is most necessary, and women who will look after the prenatal stage.

I think the three primary things needed in the use of pituitrin are a conscience, good common sense and experience in obstetrical cases.

In the case Dr. Somers reported, where the woman was delivered after a week, either it was not time for labor, or she needed pituitrin. I know there are many women delivered in Lincoln where the time for labor has not come. It is an induced labor with the difficulties induced labor brings.

Another point is the practice of sending obstetrical patients to general hospitals. It is a crime to take a clean case into a general hospital, where it is side by side with septic surgery, and where all sorts of people come to visit and bring all sorts of germs. I think it is a crime in this day and age to have a maternity hospital, except apart from a general hospital with all kinds of medical and surgical cases. The only case of sepsis I lost was in a hospital. The dirtiest house is not in danger of harboring the pathogenic germs to be found in a general hospital.

Olga Stastny, M. D., Omaha: I would like to say a few words in appreciation of Dr. Somers' paper. I agree in many things, but disagree in a few.

I think we are forgetting one of the things physicians could do, and do so much good for our future mothers. The physician who is in the profession because it is a profession and not a business—is not forgetting to as great an extent as the others. I refer to bringing up the mothers for the future. I believe in prenatal work.

In answer to the doctor's statement that in spite of prenatal work they had a high percentage of mortality, I would say the statistics must be studied carefully. When we compare the statistics of our state with those of New York City, we must take into consideration how our mothers in Nebraska live. Their environment is such it aids us of itself in keeping down our mortality. Our women are living a more normal, wholesome life. We cannot consider the statistics from the slums as we can in a state that gives good air and food, as the Nebraska women are getting.

I think each physician should give more time to answering questions which the young mothers are asking today. The thing that has hurt is I hear young mothers say, "I asked the doctor this and that, and he says, 'Don't bother about it.' "

We all do it when we get busy. Tell them it is a physiological process, and the fear they experience is lowering their resistance to a certain extent. In that way let them see we will give them a chance to do what they can, and follow that waiting policy which means so much.

I think we will lower our mortality rate. That 20 per cent that needs help should have help in the proper institution. I feel it is unjust to the general practitioner to criticise him so much if among that 20 per cent he has more trouble than we, where we have these attendants that wait on us on every side. I can conceive what a pickle I would be in a country town with a forceps delivery without trained help.

I think pituitrin should be handled carefully, but I believe there are times when it can be safely used and when it is indicated. I have used a great deal of it and have never seen any bad effects, because in the hospital where I had interneship in the east, we were very much impressed and kept down in the use of it. I was one who had to be watched because they said I would use it every time if I could. It was impressed there were very definite times it was safe. I would not like to practice obstetrics without pituitrin.

C. E. Vandiver, M. D., Ogallala: I have been a rural practitioner for a number of years, and attend about fifty cases a year. Unfortunately I have been away from the hospitals. We have no sepsis and no blood poison.

Once there was a lady nurse visiting my place from a hospital in California. She went with me into a country home—a dirty looking place. We attended the woman as best we could. The nurse said, "I am going back to tell those doctors something. It is not always necessary to have half a dozen assistants and a hospital, and all that in order to succeed."

I think the average case is hurried too much. Many times you will find after giving morphine and letting them rest, the parts will relax and labor will come along nicely. I know of one instance where a case was prematurely advanced. They gave twelve doses of pituitrin. She was sent to the city and had a delivery by Cesarean section. This child lived less than three weeks.

A. A. Conrad, M. D., Crete: I do not happen to belong to that class of specialists Dr. Hanson mentioned, nor to the class of doctors Dr. Philbrick mentioned. I am a country practitioner and take care of obstetrics because it is one of the things he has to do.

The thought entered my mind as to why we were having such a high mortality rate with the mothers and babies, and that it seems to me is heredity. There is probably no portion of the body that a child inherits so much as its skeletal growth. These mothers who need assistants and specialists, or the general practitioner with forceps, pituitrin, Cesarean section, or any measures you may use, would in the early days probably have died, leaving the child unborn. The number of children with that skeletal development will in that way be lessend, and we would have a survival of the fittest.

Fortunately. in a country practice we probably do not run up against the obstetrical problems you do in the city, where life is perhaps more sedentary; but we run across some pretty tough cases. Easter Sunday I labored with one where they could not accuse me of being in a hurry, because the mother would not let me. She refused to allow the application of forceps until nine hours after I had first wished to apply them. At that time I absolutely insisted because of the condition of the patient, and applied the forceps and got a dead baby. That may have been a faulty operation or too long delayed operation. One of our instructors used to tell us that it was not the forceps that did the harm: it was the fool behind them.

There is a time for pituitrin, and I know it has saved me from applying forceps a good many times. There is a dosage that should be followed.

As to asepsis. I feel that it can be carried out as well in the town or country home as in the hospital providing the doctor can and will take the time. In my mind asepsis is as important there as in any surgical operation. Not even the country doctor would think of going into a belly without sterile gowns, sheets, sponges, towels and rubber gloves. Why then, should he tempt the fates by being less careful with his obstetrical cases? Possibly because midwifery has been handled in a careless manner for generations, and doctors and midwives got away with it, while surgery was practically the mother of asepsis.

A steam pressure sterilizer is within the means of any doctor who wants to do clean work. In this sterilizer sponges, gowns sheets, towels, etc., can be sterilized efficiently. The gloves and instruments can be boiled in the home. These measures, combined with the knowledge of asepsis every doctor should have. should almost eliminate our cases of infection.

I want to make a brief for the country doctor, who is doing the best he can under the circumstances, who has not a bunch of female help, aside from a grandmother or neighbor woman, or nervous mother. He must pat himself on the back if he has good luck, and blame the rest of them, if he has poor luck.

M. S. Moore, M. D., Gothenberg: I have been very much interested in listening to the discussion of this paper, which was very worthy and should be fully discussed.

It seems to me that if our mortality rate in obstetrics is increasing both for the mother and child it is casting some reflections somewhere. I happen to be one of those who do not have all the advantages of the hospitals for obstetrical work; but that question is not well taken in the country. We are not increasing in the mortality rate there. I can say, as I think every man who is a practitioner in the smaller towns can, that infection is getting to be rather a rare occurrence in smaller places. If it be true that the statistics show our mortality rate is increasing, I do not know just where you are going to place the blame. You must draw your own conclusions.

Obstetrics can be practiced in the country and in the private home just as safely as in any general hospital anywhere in the United States. I am making a flat statement and will stand by it. The results depend entirely on the obstetrician.

I quite agree with the author of the paper in his statement: too many are practicing obstetrics without proper training. There are too many—I am sorry to say—who have to get their own training during their practice. That is not any reflection upon the man himself. If there is any reflection, it is upon the institution which he attended in fitting himself for his work.

Some mention has been made in regard to the use of pituitrin. I see no reason at all why a profound study of this agent should not be made the same as of any other drug you are going to administer, and if found unworthy, cast it aside. I know positively it is a great aid in the practice of obstetrics. Simply because it may be put up in a package of one cc., it does not necessarily follow that you should give the entire amount at all times. Properly handled, pituitrin is a great benefit to the obstetrician, no matter where he is practicing. If properly used, it will save a great many versions and applications of forceps; and the life of a great many children and prevent wounds to the birth canal.

F. S. Dunham, M. D., Omaha: In a statement about four weeks ago in the American Medical Journal, was an assertion something like this: "The drudgery has been taken out of obstetrics."

Now as this paper that has been read by Dr. Somers seems to stress the fact that too much haste and the question of gaining time and getting away from the case seems to be the one that brings on the trouble, what did that statement mean when it said the drudgery had been taken out of obstetrics?

I used to practice in the country in a town known to Dr. Moore. I have often spent as long as twenty-four hours, fifteen miles from home at an obstetrical case. If there is anything on the face of the earth I can call drudgery, fifteen miles in the country in a sod adobe on a dirt floor is the personification of it! I had twelve years' experience of it. If I had known of some of these so-called "improvements," would I have been justified in using them to remove that work or drudgery in taking care of that case? I might have used pituitrin or something to bring on dilatation of the cervix more quickly. But you men of my age were told in college that meddlesome midwifery is bad. I can remember my old Professor saying that many times; and adding it is justified only in cases where Nature has failed to perform her work properly.

If these modern improvements have removed the drudgery to you and me in obstetric work, and have increased the mortality of the mother and the child, hadn't we better have a little bit of drudgery?

One man says he is practicing version entirely. He has reversed Nature that is thousands of years old. He says the mortality to the child is about one per cent less than the way Nature does it. Dr. Somers spoke of Dr. Potter. This man is in France. Are we justified because we want to save time or drudgery in these cases in doing away with the laws of Nature thousands of years old?

So far as infection is concerned, I practiced medicine in western Nebraska for fifteen years. I have never had a case of infection in that country in that number of years; and I had a fair obstetrical practice. The only case of infection I ever had was a minister's wife living in the town, and that was infection of the veins formerly called phlegmasia dolens. I think I would make the admission perhaps I was the one to blame for it, because I had not disinfected my hands properly.

One expert said he never thinks about making a vaginal examination. He examines them externally. Another expert says he never makes an examination except through the rectum. They may be able to do that. They are experts. I confess I cannot do it. I must find out the presentation.

In Omaha it has become the custom to send everybody to the hospital, and a woman told me the other day they consulted four physicians to wait on her before they got one, because the other three would not take the case unless she went to the hospital. Hospitals have cases of infection. I am agreeing with Dr. Philbrick when she says if you have a good, clean home, I think it is a crime to take that woman to a general hospital to confine her. If you get into trouble, you are the one who does it.

Dr. Somers: I want to thank everybody for discussing this paper at all. I especially want to thank everybody who disagreed with me. That includes all the ladies.

The point I want to emphasize is this: Obstetric mortality is on the increase during the present century. I want to ask why? It is not on the increase in our institutions. The only safe place—I won't say that, because it is going too far — the safest place a person can be delivered at the present time is in a well organized maternity in the hands of skilled men—or women.

These men cannot tell me anything about country practice. Heavens and earth! I commenced country practice in 1872! For sixteen years I practiced in a country town. During those sixteen years I never saw a telephone. During those sixteen years, never anybody got to call me except by special messenger. During those sixteen years I never got to a patient only by horseback or walking. How about you fellows who live with a telephone in every house? They can call you up, and in two and a half minutes you know what they want. You can take an automobile and go twenty miles in the next hour, and do business or wait. You do not know anything about country practice.

Now then, I have waited twenty-four hours, as this man said. Possibly I would take the risk and run off and visit a patient. I would go in and see her and think, "You are good for another hour," and then proceed in another direction. You simply cannot compare the practice of obstetrics today with fifty years ago.

Here is this fact staring you in the face: While our surgeons, specialists, and all those men have been reducing the danger of infections, it has been increasing in obstetrics for the last twenty years. There are some facts you cannot get away from. Nebraska is doing as well in obstetrics as any other state in the Union. I have sent out a good many boys, and they come back and tell me.

There is too much pernicious activity—too many manipulations—too many examinations—too much pituitrin. The best men we have in this country say pituitrin should not be used until after the uterus is empty. I believe they are right. I never had a fatal disaster, but I have had some hair-breadth escapes. Fifty years ago we were giving ergot. We learned to shut it off until after the uterus was empty. A man needs to mix ergot with brains, and pituitrin with brains. You do not need to exclude it absolutely and altogether, but you want to handle with care.

Then you want to learn to wait. I do not believe in letting a woman suffer a lot of pain. Dr. T. G. Thomas taught me when I was a student in Columbia. "If a woman was suffering an undue amount of pain, give her a hypodermic of morphine. If you give it too near the termination of the labor, you may kill the baby."

We hear a lot about common sense, and horse sense. What we need is a lot of uncommon sense—extraordinary sense. This common sense may be common nonsense.

I am pleading for well organized maternities to take your bad cases to. The state should have a good maternity where the doctors can bring in their patients and take care of them themselves. They do not need to send them to Omaha.

Then I plead for waiting and giving them a chance. Give them morphine and let them go to sleep. I have given many a woman a hypodermic in the early evening and let her sleep all night. The next morning she would get busy and finish up the job in good shape. I was taught to use ether when the head passed the perineum in every case. Sometimes they were so precipitate I could not do it.

Dr. Potter reports he does a version in 80 per cent, and Cesarean section in 8 per cent; and I suppose the other 12 per cent are breech cases or precipitate labors!

I am simply arguing for less manipulation, fewer examinations, less activity, more of waiting; and do all you can to make the woman comfortable while you are doing it.

CHRONIC CYSTIC MASTITIS.*

Max Emmert, M. D., Omaha, Nebraska.

Under the general term of chronic cystic mastitis, Bloodgood has recently (November, 1921) grouped the following conditions.

1. Simple or multiple cysts in chronic cystic mastitis.

---

*Read before the Nebraska State Medical Assn., Omaha, April 27, 1922.

2. Chronic cystic mastitis without large cysts.
3. The blue domed cyst.
4. The cyst of the galactocele type.
5. The multiple blue domed cysts in one or both breasts (Diffuse cystic disease of the breasts).
6. The non-encapsulated adenomatous area.
7. The non-encapsulated area of cystic mastitis containing one or more minute cysts or one or more dilated ducts or both.
8. The diffuse dilatation of the ducts chiefly in the nipple zone, rarely in the breast outside this zone.
9. The non-encapsulated cystic adenoma.
10. The diffuse non-encapsulated cystic adenoma, known in literature as Schimmelbusch's or Reclus' disease or senile parenchymatous hypertrophy of Bloodgood.

By this grouping and classification Bloodgood has rendered a marked service to the clinician as well as to the pathologist. Chronic cystic mastitis occurs in the female breast during the age of active menstrual life and following the menopause. The period of greatest frequency is observed between the third and fourth decades and few cases have been reported in girls prior to twenty years of age. The condition may occur in the male breast but comparatively few cases have been reported. The majority of cases are observed in the breasts of nulliparous women and of married women who have born children but have never suckled them. However it occurs commonly in breasts which have lactated.

Occurring as it frequently does, in nullipara, the condition can not be associated with acute mastitis of lactation. No organism has ever been found to suggest a definite etiological factor. However as there is frequently present an area of fibrosis together with a sound cell and leucocytic infiltration, it is strongly suggestive of an irritative lesion possibly from a low grade infection present elsewhere in the body. I have seen one case which gave the clinical picture of chronic mastitis and was definitely associated with a sinus infection. After correction of the sinus trouble the breast condition practically disappeared.

The inflammatory theory of etiology is the oldest and was endorsed by Bilroth and Virchow. Schimmelbusch and some of the German pathologists have considered this condition to be of neoplastic origin, whereas Warren in this country has advanced the theory that it is due to abnormal involution of the breast.

The attention of the patient is usually attracted to the breast by pain. This pain is of the lancinating type and may precede the formation of any palpable mass. The pain is exacerbated during the menstrual period and varies in its intensity and duration. It may persist for several weeks or months and then disappear for several months or years. Many patients do not notice the pain until their attention is attracted to the breast by the discovery of lumps. Patients will often give a history of having been conscious of the presence of nodules in the breasts for years but no alarm was felt until they discovered that one of the nodules was becoming larger. A few will give a history of a serous discharge from the nipples.

The characteristic feature of chronic cystic mastitis is the multiplicity of the nodular envolvement. Examination of the breasts reveals, in the majority of cases, multiple nodules in one or both breasts. These nodules vary in size from a small bird shot to the large cyst. The smaller size are more commonly felt and may be scattered throughout the breast or localized in a quadrant or hemisphere. The more numerous the nodules, the less is the danger of a complicating malignancy. In the majority of cases these nodules are cysts, consequently the larger they are the easier it is to recognize them as such. There is no atrophy of the subcutaneous fat, no shortening of Coopers ligaments, no fixation to the skin or to the underlying structures. Retraction of the nipple does occur but not frequently. When present the patient usually gives a history of several years standing during which the nipple has retracted several times and regained its normal position until finally it remained in the retracted condition. Pressure upon the breast may express a clear or straw colored serum from the nipple.

The stroma of the involved area gives different degrees of induration depending upon the amount of fibrosis present. When the entire breast or both breasts are involved, the induration as a rule is not as marked as in those cases in which the involvement is confined to a segment of the breast. In the latter class of cases the border of the involved area may be easily differentiated from the normal breast tissue. One important differential sign, when present, is tenderness of the involved area which aids in differentiating this condition from carcinoma. The axillary glands are frequently enlarged and tender but do not present the hardness which often characterizes the malignant gland.

The opinion regarding the relationship between chronic cystic mastitis and carcinoma of the breast has undergone a radical change in the past few years. Ewing claims that "50% of cases showed pronounced precancerous changes or miniature carcinomas" and that "it is a very important predisposing condition to mammary cancer." However, when we remember that autopsy statistics show that 25% of all senile breasts present the changes of chronic cystic mastitis, we must conclude that this percentage is too high.

Bloodgood says "Among the 350 cases of chronic cystic mastitis, my evidence seems to show that if the palpable single or multiple lesion can be recognized in the first six groups which include 319 cases, the breast can be saved without the patient running any more risk of cancer than is incidental in any woman of the same age." The non-encapsulated cystic adenoma, comprising 18 cases of his series revealed the presence of one carcinoma and in the group of diffuse non-encapsulated cystic adenoma, of which he reports 13 cases, one carcinoma was found; so that in his report of 350 chronic cystic mastitis cases, two carcinomata were found. It is to be understood that in this group of cases there was no clinical evidence of malignancy. Our diagnostic problem therefore is to recognize and segregate these two groups from the other classes of chronic cystic mastitis.

The non-encapsulated cystic adenoma occurs most frequently in the nipple region as a circumscribed area of firm induration very closely simulating malignancy. In this area, small nodules may be distinguished, though this finding is by no means constant. Retraction of the nipple is frequently present. In this group of cases, the patient frequently gives the history of a long standing lump which has suddently started to grow.

The diffuse non-encapsulated cystic adenoma class of this disease is, as the term indicates, a diffuse involvement which may be limited to a quadrant or a hemisphere of the breast or may involve the entire breast. It is this group of cases which is frequently diagnosed as adenocarcinoma. This tumor frequently causes a break in the normal contour of the breast and may be seen as an elevated prominent segment of the breast. To palpation it gives the sensation of a caked breast with rather definite margins. It is frequently possible to feel small shot like nodules in this indurated mass, which aids in the diagnosis. The nipple may or may not be retracted and a brownish discharge from the nipple may be expressed.

The presence of chronic cystic mastitis in a breast is by no means an indication that other pathology does not exist, as tumors of all kinds are frequently associated with this condition of the breast tissue. This is especially true of carcinoma which frequently occurs in a breast in which chronic cystic mastitis changes have taken place. Our chief warning therefore is to avoid being lulled into a state of complacency upon the diagnosis of chronic cystic mastitis.

The method of handling these cases depends upon the class of the disease encountered. When the involvement comprises numerous small nodules of uniform size and with little or no perceptible induration and no involvement of the nipple, then the only surgical indication is for exploratory incision in order to confirm the diagnosis.

When one nodule is larger or varies in character from the remaining nodules it should be excised with the surrounding breast tissue for pathological examination. If at operation the gross pathology indicates malignancy the operation should be followed immediately by the radical procedure.

The diagnosis of the non-encapsulated cystic adenoma or the diffuse non-encapsulated cystic adenoma group of chronic cystic mastitis is per se an indication for the removal of the entire breast. If from pathological examination any evidence of malignancy is found, the operation should be completed by attacking the axillary, sub-clavicular and lower thoracic regions. If a diagnosis of malignancy can be made prior to operation, the presence of chronic cystic mastitis should be ignored and the surgeon should operate according to the radical methods in vogue.

Every single tumor of the breast in patients over twenty-five years of age should be removed but it is no longer justifiable to do a radical operation upon the breast for every neoplasm found.

The majority of benign tumors can be removed from the breast under local anaesthesia with very little inconvenience to the patient. With the increased interest of the laity in the matter of tumors which brings them to the diagnostician with an early involvement and with our greater knowledge of recognizing these tumors and improved methods of treating them, the future looks bright not only for less mutilation of the patient but also for a marked decrease in the mortality from cancer of the breast.

The points which I wish to emphasize are:

1. Chronic cystic mastitis is a comparatively common condition of the female breast.
2. The majority of cases of this condition can be recognized clinically prior to operation.
3. The majority of cases can be clinically differentiated from carcinoma of the breast.
4. Many cases can be operated upon under local anaesthesia.
5. Every single tumor in the breast of a patient over twenty-five years of age should be removed.
6. It is not justifiable to perform a mutilating operation for a benign neoplasm.

Comparison of Chronic Cystic Mastitis.	Carcinoma.
1. Age of incidence 3rd to 5th decade.	1. Age of incidence 3rd to 5th decade.
2. Multiple Involvement.	2. Single involvement.
3. Pain — Early Symptoms.	3. Pain — Late symptom.
4. Discharge from nipple — Serous or straw color.	4. Discharge from nipple. Blood (2%) or grumous.
5. Retraction of nipple—Rare.	5. Retraction of nipple — Common and most important.
6. Subcutaneous fat not involved.	6. Subcutaneous fat —Atrophy.
7. Skin — Dimpling and fixation absent.	7. Skin — Dimpling and fixation early.
8. Cooper's Ligament — No shortening.	8. Cooper's Ligaments — shortening.
9. Palpation — Often tender.	9. Palpation — not tender.
10. Axillary glands—Tender.	10. Axillary glands not tender.

BIBLIOGRAPHY.

1. Neoplastic Diseases, Ewing.
2. Archives of Surgery, Nov., 1921—Bloodgood.
3. Keen's Surgery, Finney.
4. Southern Medical Journal, May, 1920—J. S. Rodman.
5. Binnie's Regional Journal, Vol. I—Bloodgood.
6. Annals of Surgery, 1916, p. 696—Syms.
7. Journal A. M. A., 1921, p. 133—Bloodgood.

DISCUSSION.

C. O. Rich, M. D., Omaha: I think we should be very grateful to the essayist for presenting this subject before this society; it is one we do not know a great deal about. We have always felt that a chronic cystic mastitis was a precursor of cancer. There have been three theories advanced as to its etiology. The inflammatory is the oldest, endorsed by Bilroth and Virchow. Schimmelbusch and Reclus considered this condition was the result of epithelial proliferation similar to that occurring in carcinoma, followed by secondary degeneration of the accumulated cells and the consequent formation of the cysts. Warren, Gross, Bloodgood and McFarland in this country advanced the theory that it is due to abnormal involution of the breast.

From a clinical standpoint it is difficult to differentiate and make a natural deduction of a chronic cystic mastitis; because we see in the same breast areas of cyst formation and carcinoma. I recently saw a slide, in which there was a simple cyst lined by columnar epithelium, another area in which there is a papillomatous proliferation of the epithelial layer, in another the cyst was filled with a papilloma, and the last area showed a true carcinoma. The ultimate diagnosis rests with the microscope.

Then another thing that has appealed to me very strongly in my work on the breast is the fact we cannot place too much dependence upon a frozen section. I think it is one of the most valuable aids we have, yet it is done hurriedly, and opportunity is given the pathologist for examining only a limited area of the breast. In order to reach a proper conclusion, he should have the opportunity of going over the breast thoroughly. If there is any evidence suggestive of malignancy, the radical operation should be done. When in doubt, we must depend upon our frozen section. The wound should be taken care of in such a way as not to allow the disease to progress if it happens to be malignant.

Karl Connell, M. D., Omaha: The essayist is to be congratulated in presenting a problem that deals with preventive medicine. He has gone around the fringes of the entire cancer problem and approached it from one of the vantage points, viz., the precancerous lesion. In surgical attack on cancer of the breast, the surgeon is in the most hopeful field in cancer surgery, except the comparatively nonmalignant basal cell tumors of the skin. Cancer of the breast kills 8,000 women each year in the United States. A presentation such as the essayist makes will materially help us to take care of these malignancies more effectually, viz., in the precancerous stage. There is little to add in discussion except possibly to bring out several of the high lights.

The first topic of interest is that out of the confusion of the multitudinous classifications of cystadenomata, we are now grouping the tumors under the term chronic cystic mastitis. The laity groups the subject even more concretely, possibly, more practically, as "lump in the breast."

Through the recent campaigns of education this stands as a danger signal and as something immediately operable and fortunately so. Yet when these lumps come to the surgeon for operation then arise some of the finer points of diagnosis on which Dr. Emmert has touched. Surgery should not mutilate the breast bearing the nonmalignant tumor, nor spare the one carrying malignancy. The second and finer point then comes up, of the differentiation. From a confused mass of differential points in diagnosis we must pick out the salient features. Certainly, as the essayist has emphasized, it is not pain, for pain more commonly comes with these cystic distentions that are nonmalignant than with true malignancy. Of the earliest symptoms that I myself abide by, the sense of fixation properly elicited is one of the finest and most reliable differential signs. The cyst and fibroadenomata and other benign lumps, push the adjacent tissues aside, but the cancer cell eats away and undermines the surrounding tissues. It pulls in the slack of the ligamentous processes that connect the breast to the skin so that in picking up the skin of the breast over a malignancy one experiences a sense of fixation and sees a delicate dimpling resulting from this destructive shortening of Cooper's ligaments. This sign, properly elicited, is to my mind the earliest and surest differentiation.

The next subject for comment in diagnosis is the appearance of the tumor at operation. The surgeon cannot lean too heavily on the microscopist for immediate diagnosis. The frozen section of the microscopist at the operative field is less reliable than the trained sense of the surgeon as he cuts into the tumor in situ. These rules hold; if, on cutting down into the tumor it pops up through the skin freely and is non-adherent, it is not malignant. If, on the other hand, it sends tentacles into the surrounding tissues and has shrunken the adjacent tissue into itself, then the surgeon may proceed on the assumption that he is dealing with malignancy.

These, then, are the three high lights in the subject of breast tumor: first, every lump in the breast is potentially dangerous; second, fixation properly recognized through the dimpling of the skin is a very early and one of the surest diagnostic signs of malignancy; third, the surgeon at the time of operation should proceed with his knife into the tumor and can thereby diagnose its nature with less chance of error than the pathologist working with frozen sections at his elbow, the chief diagnostic sign of malignancy being the fixation of the tumor to adjacent structures.

Dr. Emmert: There are so many interesting points it is hard to cover them all. They have been covered well by Dr. Rich and Dr. Connell.

The increased interest of the laity is bringing the patient to the doctor with a neoplasm of a much earlier stage. It is up to the doctor to increase his ability to recognize these earlier stages, and the surgeon to recognize the conditions as he sees them prior to operation or at operation, instead of relying upon the microscopic report which is received from the pathologist in a week or so.

One feature from a diagnostic point of view is this: Carcinoma is usually a single involvement in the breast. Multiple tumors in one breast, or one or more in each breast, as a rule indicate a benign lesion. That is one of the most important points I think from a diagnostic point of view.

It is the surgeon who finally passes upon the neoplasm at operation. I think the time has come when it is no longer justifiable to hide behind the old aphorism: "When in doubt, do a radical operation." There are too many women who have been mutilated for that very reason. We must separate the benign from the malignant, and treat the former conservatively.

PERITONEAL INFECTIONS OF THE FEMALE PELVIS.*

B. A. Bobb, M. D., F. A. C. S., Mitchell, South Dakota.

In presenting this subject I can touch only a very few of the phases of the factors involved, for the reason that a fair sized volume could be written on the subject.

Owing to the fact that pelvic infections constitute such a large proportion of the diseases peculiar to women, and not only that, but that finally the end result is either invalidism or possibly death, it behooves us, as surgeons, to ascertain and use every means at our command that we may in a large measure at least, lessen to some degree the invaliding processes.

It is not important, at this time, that we enter into a discussion of the etiological factors entering into this process of peritoneal and pelvic infections, as it has been pointed out by Kronig, Williams and others that pathogenic organisms do not live long in the normal vagina, but soon after any trauma or congestion of these parts the microorganisms become virulent, and with an unobstructed passage from the vagina to the pelvic peritoneum one understands how soon pelvic trouble may be caused. Of course, nature erects many safeguards for herself and many obstacles to the bacteria, such as closing the fimbriated tubal ends, (except in tubercular infections), but the temptation is too great it seems, and many of the microorganisms slip by and the pelvis is in trouble.

Time and space will not permit us to discuss in detail the various etiological factors and symptoms, as, the anatomical structure of the pelvis, menstrual periods, child bearing period, faulty dress, constitutional and local diseases, as nearly all such are only a means of lessening the patient's resistance to the three great factors, namely; infections following labor and abortions, perforated appendices and gonorrhoea.

From the apparently little, seemingly benign, infection of the vulva or vagina, that quickly gains entrance into the uterus, causing septic endometritis, then metritis, and soon circulatory disturbances in the Fallopian tubes followed by involvement of the pelvic peritoneum (especially if it is the streptococcus), arises a condition that demands our most serious consideration. Or, it may be that the little innocent appendix goes on a rampage; just simply a few of the intestinal germs are misguided and enter its portals, and it proceeds to make an artificial exit for them, instead of sending them out the way they entered, and here again occurs a violent infection of the peritoneum, with which it is unable to deal alone, and we are called to the rescue.

---

*Read before the First Group Meeting., Nebraska, Iowa and South Dakota Sections, American College of Surgeons, Lincoln, Neb., Feb. 6-7, 1922.

About a year ago, I read of a series of cases, 1200 I believe, with 1200 controls, and if I remember right it was in a clinic in Montreal, of the alkalinization of the patient before operation. I have forgotten the parties that maintain this clinic, and I am sorry, as I am sure that I have learned a valuable lesson from the method they pursued in that series of cases. However, many other surgeons have been studying the subject during the past few years and I believe that we are arriving at conclusions that are quite valuable to us, both as to the postoperative comfort and ultimate recovery of the patient. Hence, I desire to say that I am not bringing anything particularly new to you, but rather, I wish to emphasize a matter that I believe is of considerable importance.

I take it for granted, that we now believe preoperative purgation, formerly in vogue, is obsolete, as its harmful results have been pretty well established by Emge, Alverez, Peet and Sajous, as quoted by Cary in his recent article in Surgery, Gynecology and Obstetrics, October, 1921.

We are aware that physiologists and scientists maintain that the blood cannot be alkalinized a millionth part, but it is the end result we are after and it makes no difference to us and especially to the patients, whether we say alkalinization of the blood to prevent acidosis, or whether we say that we will give a few doses of sodium bicarbonate internally and a little glucose and soda per rectum for a couple of days before your operation and we can assure you that you will have a much more comfortable convalescence, than otherwise.

It was pointed out by Cary that acidosis is greatly increased in some patients by anesthesia and that general anesthesia is nearly always associated with a certain degree of asphyxia which leads to suboxidation which in itself causes an acid intoxication, as quoted from Crile Tr. St. Med. Soc. N. Y., Apr. 26, 1915, and that long and wide abdominal exposure and traumatism of the intraabdominal viscera are conditions which predispose to acidosis indirectly through the surgical shock produced.

Again quoting from Cary as pointed out by Rieman and Hartman, after anesthesia and operation, there is uncompensated acidosis in some patients. They state that in 90 cases studied, the urinary acidity was increased very definitely, until in some cases almost half normal acid was secreted.

About a year ago we determined to put into use two methods of treatment that we theretofore had not been using to any great degree, to-wit: In all abdominal and pelvic infections, preoperative alkalinization of the patient was to be attempted if possible, and the patient kept alkalinized postoperatively for a few days and, secondly, a different method of postural drainage than we had theretofore used, our former method being the Fowler position.

We are firm believers that the element of the time consumed in operations on septic abdominal and pelvic cases has much to do with the surgical shock produced and hence the acidosis, and while we do not follow the dictum, "Get in quickly and get out quicker" still we do believe that every moment consumed longer than absolutely necessary ,consistent with thorough work, may add months to the invalidism and possibly cause the death of the patient.

OUR METHOD.

Our plan has been; 1st. Preoperative treatment for one or two days to increase the alkali reserve of the body, by giving large doses of sodium bicarbonate, one to two drams in water three or four times a day and at the same time, once and sometimes twice a day, giving the patient a solution of 5% glucose with two drams soda and 10 ounces water, this solution being used by the Murphy drip process per rectum.

All of our adult patients have given to them one hour previous to their operation a No. 1, H. M. C. tablet per hypodermic, and while we are aware that there is more or less criticism of this routine procedure, we are firmly convinced that it adds greatly to the postoperative comfort of the patient, as well as the prevention, in a measure at least, of surgical shock and postoperative pneumonia, and we have used and observed its effects in something over 5000 surgical cases.

During the one or two days of preoperative treatment we encourage the intake of large quantities of water, and this should be so directed as to ingest only small quantities of water at a time, but taken frequently enough so as to give an intake of 6 or 8 pints in the 24 hours.

As pointed out by Max Kahn Surgery, Gyn. & Obs. 1920, the fluids can be temporarily retained in the body by the exhibition of sodium bicarbonate.

POSTOPERATIVE TREATMENT.

The postoperative treatment consists, 1st. Instead of elevating the head of the bed, as in Fowler position, we have the bed elevated only about six inches; then the patient is placed on the bed in what you might term the exaggerated Sims position, lying on the side best adapted for the drainage indicated. This is a quite natural position in which many people sleep, and hence, is not as uncomfortable as you may think. The hips and back are brought well to the edge of the bed and bolstered up with pillows in such a way that the abdomen and pelvis in front is the lowest point and drainage is established by gravity, which we believe very much lessens the danger of pockets of pus being formed in the pelvis and we are also convinced that this gravity method is all important and we direct that this posture be maintained for several days and in some cases throughout the entire convalescence.

2nd. There is another advantage that is important and that is, the ease with which the following treatment is given and retained. Immediately the patient is returned from the operating room and placed on her bed, the nurse is instructed to give the following prescription, by the Murphy drip method. Tr. Digitalis, Drms. 2, Sodi Bicarb. Drms. 2, 5% Glucose Sol. Oz 2, Water qs. ad. Ounces 10. The digitalis has a beneficial effect on the muscular tone of the heart as reported from the Montreal clinic, as well as the bowels, and in some way the combination goes a long way in the prevention of paresis of the intestines, which is a bugaboo to many a surgeon in many a case.

The digitalis is given but once in the solution, otherwise the solution may be repeated every 6 to 8 hours if it seems indicated. The patient is also given 1/40 gr. strychnine every four hours for the first 48 hours. This whole procedure needs only to be tried in a few of your septic cases, when I am sure your observation will convince you of the improved and more comfortable convalescence, than by former methods of treatment.

Liquids, semisolids and full tray is given the patient as soon as practical and usually in 3 or 4 days the patient is complaining of feeling hungry and desires food, and can be given a fair amount of nourishment.

We believe in ample drainage and use one larger rubber tube, placed well down in the cul de sac with long forceps, but before fastening the tube it is raised about ½ inch, so as not to cause a pressure necrosis on the rectum or sigmoid. We also place a soft rubber drainage, this usually being a rubber glove, with the fingers cut off, and then rolled up and placed in the abdomen at the place of advantage to give the balance of the drainage. This soft rubber drain may be removed in 3 or 4 days and the other tube raised and cut off ½ inch or so every few days until drainage discontinues. Sometimes in slow and long continued drain cases, this rubber drain tube is removed after 10 days or so and a more narrow tube inserted in its place.

The hypodermic of H. M. C. given an hour before the operation induces sleep for the patient for 2 or 3 hours after the operation, and when the patient awakens, we believe in the liberal use of morphine, that is, one or two large doses (¼ gr. with atropin) being given within the first 24 hours if needed for pain, as the larger dose will relax the intestines sufficiently to allow the gases to pass off easily, while the smaller dose seems simply to increase the tension.

We have not tabulated our cases since using this method, neither have we operated so as to judge by a series of control cases, but we feel confident from general observation of the patients thus treated and operated upon that we are obtaining a much more smooth and less stormy convalescence.

With the alkalinization method the postoperative gas pains are much lessened, general abdominal distension is much less and intestinal paresis is becoming a thing of the past.

To still further emphasize the merits of this method of treatment, I desire to submit the condensed report of just one case. This was a most virulent infection with the streptococcus and colon bacillus.

Case No. 4468—J. W., age 40. Female. White. Entered hospital Nov. 5th. 1921, complaining of a constant pain in the lower abdomen for the three weeks past. Family history is negative so far as having any bearing on the present illness. Habits regular, appetite fair, sleep poor, bowels constipated, urine negative. Menses began at age 11, 28 day type, duration five days. Four children, eldest seventeen years, youngest nine years. One miscarriage three months ago, two months pregnant when miscarried. Past history usual children's diseases, typhoid when nine years old tonsillitis, frequently, influenza, 1920. Operation 12 years ago for lacerated perineum. Present illness: Patient states that on August 14th, 1921, when about two months pregnant she miscarried, but that placenta did not all come away and the debris was removed from the uterus by a physician at her home. About two months later she complained of a pain in the pelvis and was brought to the hospital on Nov. 5th and placed under my service for treatment.

Physical findings: Looks anaemic, skin sallow and dry; temp. 100, pulse 80. no pathology found to exist in the head, chest or upper abdomen. Pelvis. Tenderness marked in both lower quadrants and bimanual examination revealed a mass as large as a hen's egg, just to the right and posterior to the uterus, rather dense and indurated, but seemed to fluctuate on palpation. Haemoglobin 75%, white blood count 12000, polymorphonuclears 86%. Urine acid, no albumen, sugar or casts. Recommended hot fomentations to lower abdomen for a few days, but not improving, she was removed to the operating room and under a local anaesthetic the tumor mass in the cul de sac was incised and a large blood clot removed but no pus. Patient improved and in ten days was removed to her home twenty miles distant. She seemed to improve for a few weeks, but was suddenly taken worse and was again transferred to the hospital with about the same symptoms as before with, however, a leucocyte count of only 7500, and temp. of 99 to 100. Bimanual examination now revealed more or less pelvic adhesions and great tenderness and a preoperative diagnosis of a salpingitis, probably streptococcic was made. Operation recommended. Operation: Abdomen was opened in the median line and observation revealed a mass of adhesions about the uterus and tubes, the right tube being 4 inches long and 1½ inches in diameter, and its fimbriated end being firmly agglutinated to the sigmoid, the left tube being only slightly infected and enlarged. The adhesions were carefully broken and severed and the right tube removd in toto and the laboratory report showed a very narrow lumen but filled with a mucopurulent secretion loaded with streptococci, and at the fimbriated end a colony of the colon bacillus.

After completing the peritoneal toilet, the abdomen was closed with the drainage as suggested in the paper, and the patient transferred to her bed with the head of the bed raised 6 inches. The patient was placed on her left side in the exaggerated Simms position and the glucose, digitalis and soda solution commenced at once, giving 10 ounces by the Murphy method. She was given 1/40 gr. strychnine every four hours for 48 hours. In ten hours a second 10 ounces of the glucose solution was given with the digitalis left out. On the third day a 1-2-3 enema was given with splendid results.

The temperature shot up to 103 within a few hours after the operation and pulse to 96, but temperature came back to 99 on the second day and to normal, and remained there during her convalescence. On the 3rd day she complained of being hungry and was given semisolids. The drainage was good from the beginning with scarcely any distension. The soft rubber drainage was removed on the third day and the long pelvic drainage tube on the tenth day, when the patient stated that she felt very well.

EDITORIAL PARAGRAPHS.

Doctor! Give this editor a vermifuge: "The medical doctors stand together and piously declare that the "ethics" of their profession forbid them to advertise—and pay money for it. Yet they average good and stout when it comes to the science of securing free newspaper publicity. The newspapers should unite and cut the "Dr." and "M. D." out of every news item, or collect a fat fee for printing it. Just so. And again yes." —(Fairmont Chronicle.)

A press report states that Professor Joseph Rotter, Berlin, has retired after 32 years of active practice during which time he performed 45000 operations, 15000 of them being eye operations. This when brought down to small fractions means 1400 a year, or 4 a day for every day of the 32 years.

It is understood that the Creighton University college of medicine registered at the beginning of the school year 160 students; the Nebraska University college of medicine, 325 students.

A confrere, who has considerable venereal practice, complains to the editor about what he considers the negligence and inefficiency of the State Bureau of Health. His argument seems plausible: Within a few weeks four of his farmer-shipper customers, returning from the South Omaha market came to him complaining that they had contracted gonorrhoea in the toilets in the wicked market city. The confrere thinks the State Board of Health should see to it that the offending toilets be quarantined. Page Chief Dillon and A. A. S. U. S. P. H. S. Bartholomew!

INFECTIOUS JAUNDICE — REPORTS WANTED.

Editor, Nebraska State Medical Journal: The undersigned is desirous of obtaining information regarding the prevalence of Infectious Jaundice in your State.

The disease is non-reportable and information regarding its prevalence cannot therefore be obtained from Boards of Health. I shall be grateful for any reports of outbreaks which your readers may care to send me.

George Blumer, M. D.,
195 Church St., New Haven, Conn.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor,....Madison, Neb.
R. B. Adams, M. D.,
Associate Editor,....Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.

F. A. Long, Chairman	Madison
W. O. Bridges	Omaha
B. F. Bailey	Lincoln
R. B. Adams, Ex officio	Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII January, 1923 No. 1

Annual Meeting, Lincoln, May 14-17

CANCER WEEK PROGRAMS.

Cancer Week, Nov. 12-18, was generally observed throughout the state by meetings in practically every city and village some day during the week. The general plan followed was that of assigning four medical men from Omaha or Lincoln, each specially qualified in a particular line, to speak in every town in a given county on the same day and meeting with the county medical society at some central point in the county the same evening over a fellowship dinner, followed by a program covering the four cardinal points of cancer attack: Cancer of the Uterus, Cancer of the Breast, Gastrointestinal Cancer, Superficial Cancer.

NEW SECRETARY OF THE A. M. A.

Dr. Olin West of Nashville, Tenn., has been elected Secretary of the American Medical Association succeeding the late Dr. Alexander R. Craig. Dr. West comes to the work of the association well prepared. He has been Editor of the Journal of the Tennessee State Medical Journal, Secretary of the Tennessee State Medical Association, Secretary of the Tennessee State Board of Health and for some time has been Field Secretary of the American Medical Association.

A MESSAGE FROM THE SECRETARY TO THE MEMBERS.

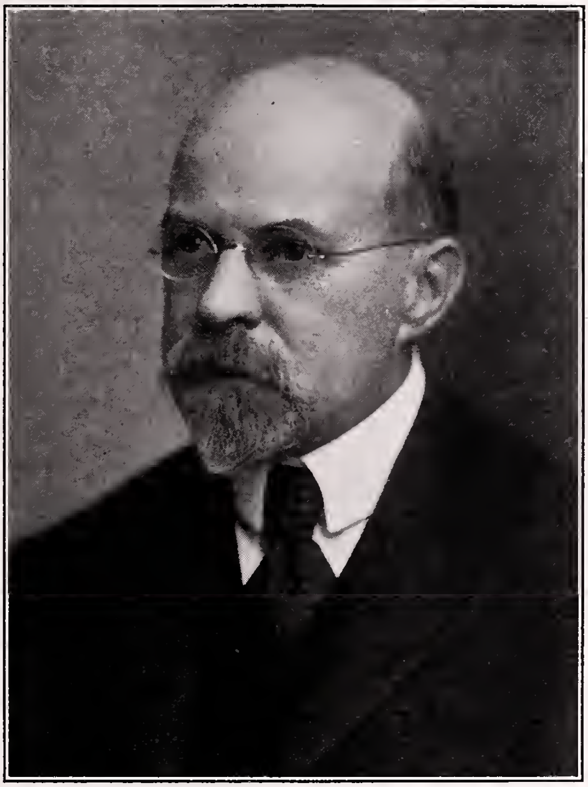
Your annual dues are five dollars. The amount became due January first, 1923, and becomes delinquent January 31, 1923. If not paid up now, send the amount to your county secretary promptly so that he can send it to headquarters and thus keep the rolls complete and your Journal subscription active. The dates set for the next annual meeting of the Nebraska State Medical Association are May 14, 15, 16 17, 1923. Members wishing to present papers before the next annual meeting will please send name and title to the office of the association at Omaha (609 Loan and Building Association Building). As heretofore the committee will endeavor to get as many papers from members of the profession out in the state as possible. Send title in early and insure yourself a place on the programme.

During the last session of the House of Delegates the largest attendance on any day was about half the number of delegates; on other days the members present fell as low as thirty. This is a fair sample of the attendance for several years, and is a condition which must not continue. Numerous matters of great importance come before this body from time to time and they cannot be properly taken care of with so few delegates present. At the next meeting, if present plans mature, it is intended to bring up a subject which will concern every member of the Association and it is necessary that a full attendance be had.

The State Association can only be strong and do good work when every County Society is active and doing its best. The State Association is trying to get more actively in touch with its component branches. Therefore elect as delegates members who are interested, keep them interested and be sure they attend the next annual meeting and take responsibility in the House of Delegates.

—R. B. Adams, Sec.-Treas.

The President's Greeting



Dr. Benj. F. Bailey, president of the Nebraska State Medical Association and ex-president of the Lancaster County Medical Society, has been a resident of Lincoln since 1886. He was born in Littleton, N. H., in 1860, and received his education in N. H., Boston and Philadelphia. For a few years he practiced medicine in New England but ill health caused his removal to the west so that for thirty six years he has been intimately associated in the building of Nebraska, and has been a constant and enthusiastic worker in the maintenance of the highest standards of the medical profession. For twelve years he was a member of the Nebraska State Board of Health, and through those and later years has helped in the development of the present medical laws. Dr. Bailey has been no less interested in the civic betterment of Lincoln and has been an active worker in the Red Cross, Boy Scouts and Rotary. The past year he was president of the Lincoln Chamber of Commerce, and is now filling his second year as president of the Sons of the American Revolution.

We are beginning a new year and it is my highest desire that during this year the great medical profession of Nebraska may so learn to know and understand each other that they may be brought into very close comradeship. Such comradeship will develop in the members of the profession those traits and ideals which will make us proud of our fellow's strength and patient with his shortcoming. We may learn to support and respect each other in a way that shall give to us the enduring support and respect of the people of our State. The State of Nebraska has a strong profession and great possibilities. All we need to develop these possibilities is first the enrollment of every eligible physician in the State as members of the association, and second a cooperative work toward the highest ideals which are the dream of the very best men and women of our profession. Let us labor to this end during the year.

I wish for the Association and for every member of the Association a most prosperous and happy New Year.

—Benj. F. Bailey.

A STUDY OF MATERNAL DEATH IN OMAHA.

Disease and untimely death are largely responisble for the breaking up of families which leave children homeless.

For some years Omaha has been developing a general public opinion which condemns the needless death of little children, as shown by its clean milk regulation, school nurses, baby clinics, playgrounds, nutrition classes.

Omaha has not been so keenly alive to the relation which child health bears to the health of the mothers, nor has it been generally known that such protection can only be really effective if it begins before the child is born.

Practical steps for a more adequate program of control of maternal and infant mortality from causes connected with birth, as well as the prevention of illnesses related to those causes, should be considered when it is brought to our attention from information gleaned from the Health Department that for women between the ages of 15-47, diseases caused by pregnancy and confinement are at the head of the list of the five most prevalent causes of death in Omaha.

MATERNAL MORTALITY.

Number of deaths of women of child bearing age (15-47) from five of the most prevalent causes in that age group.

Omaha 1921

Cause	Number of Deaths
All causes	326
1. Puerperal Group	44
2. Tuberculosis	40
3. Heart Diseases	33
4. Peritonitis	29
5. Operative mortality and shock	24
6. Cancer	24

In Omaha during the year 1921 the total number of births were 5044; the total number of still births during the same period being 187 or .037%. This number, 187, subtracted from the total number of deaths for that year 2821, gives us the difference of 2634.

The maternal death rate per 1000 births in some of the other cities, was:

3.9 in Chicago Lying In Hospital.
5.3 in Boston.
7.5 in Philadelphia.
8.0 in Pittsburg.
8.1 in Detroit.
7.4 in Grand Rapids, Michigan.

While in Omaha the percentage reached 8.7. This is very reprehensible. "Birth itself is often more than a time of stress; it may be truly the portals of death."

It is high time the public should be taught what can be done by prenatal care and proper and clean obstetrics; for good obstetrics would go far toward removing the horrors of childbirth and consequent dread of invalidism. Prenatal care is the right of every prospective mother.

The press of the country can save more lives of infants and mothers from diseases incidental to childbirth by frequent and continuous publicity which will bring people to realize the importance of proper medical and nursing care for the mother before, during, and after the time of childbirth; than can be accomplished by the entire medical profession when the patients present themselves in some of the accidents or abnormalities of pregnancy and labor. The ounce of prevention is far better than the pound of cure.

There has been a revolution in the last two decades, "in the control of certain preventable diseases, such as typhoid, diphtheria, and tuberculosis. During that time typhoid rate has been cut in half, the rate from tuberculosis markedly reduced, and the rate from diphtheria reduced to less than one-half."

Quoting from the Community Trust of Prenatal Care in Chicago: "The daily press, since the incidence of the epidemic three years ago, constantly calls attention to the dangers of influenza, its prevention and cure. "Tuberculosis literature" has been spread broadcast over the country in the campaign to stamp it out. Wartime brought another nation-wide effort to control venereal disease. Infant mortality and some of its causes are now familiar topics to lay audiences. The same popular interest in maternal mortality is only beginning to kindle. In the words of the federal report above mentioned, "Communities are still to a great extent indifferent to, or ignorant of, the number of lives of women lost yearly in childbirth; many communities which are proud of their low typhoid or diphtheria rates, ignore their high rates from childbed fever. Communities are only beginning to realize that among their chief concerns is the protection of babies born within their limits, and necessarily also of the mothers of those babies before and at confinement. There is every reason to hope, when the full significance of this needlessly great loss of mothers and babies is appreciated, that another country-wide uprising against a specific cause of death will be focused, and that expectant mothers will be surrounded with every possible safeguard in what Sir Arthur Newsholme regards as "the one chief event in the national life with which is wrapped up the future, and the future welfare of mankind."

Statistics recently collected by Dr. Dublin, the actuary of the Metropolitan Life Insurance Co., have shown that 45% of all women dying in childbed in this country succumb to infection; and that 25% die from toxemia or eclampsia. In other words, his figures show that practically three-fourths of all the women dying in childbed in this country perish from two diseases which could almost always be prevented.

—Earl C. Sage.

VITAMINS.

The discovery by E. V. McCollum and his associates of a new distinct vitamin, the anti-rachitic vitamin, has again brought forth the overwhelming importance of nutrition in health and disease. It is only eleven years ago that Casimir Funk, then twenty-seven years of age, published the results of some experiments in which he announced the discovery in food of a water-soluble substance absolutely necessary for life. This substance he named vitamin in the belief that it was a nitrogeneous complex related to the amines. He was not content with merely publishing a paper or two for he possessed the missionary spirit. He betook himself from Germany to England and thence to our own country, where he now is, broadcasting and popularizing the results of his experiments, which, vigorously pushed forward by Lafayette B. Mendel of Yale and especially by Elmer V. McCollum of John Hopkins, have resulted in the founding of a new science destined to influence profoundly humanity at large.

Funk knew of only one vitamin, but as a result of the intensive work of investigators, the vitamin family has enlarged to four: (1) the anti-ophthalmic (fat-soluble A); (2) the anti-neuritic (water-soluble B); (3) the anti-scorbutic (water-soluble C); and (4) the anti-rachitic (fat-soluble D).

Up to about a decade ago the investigators in nutrition, among whom may be mentioned Voit, Rubner, Atwater and Lusk, focussed their entire attention upon calories. No thought was given to the quality of the proteins, fats or carbohydrates used so long as they furnished the desired number of calories. It was the work of Osborn and Mendel that first brought forward the distinction between the superior proteins that possessed and the inferior proteins that lacked the amino acids necessary for growth—cystine, trytophane and lysine. It was the work of McCollum, the discoverer of fat-soluble vitamin A, that first proved that certain fats, apart from their heat-producing power, were inferior, since their exclusive presence in the dietary resulted in a pathological condition known as xerophthalmia or keratomalacia, and also in a lack of growth. Butter fat, liver fat and cod liver oil he considered rich in anti-ophthalmic vitamin, while in vegetable oils and lard he found it practically absent.

As a matter of fact the last few years have witnessed such a tremendous wave of progress in the study of foods that our ideas of an adequate diet have undergone complete revolution. As the science of nutrition stands today such a diet should supply

1. Sufficient energy (calories)
2. Proteins of sufficient quantity to maintain nitrogen equilibrium or a positive nitrogen balance, and of such quality as to maintain growth and to replace wear and tear (lysine, cystine, tryptophane)
3. Carbohydrates
4. Fats
5. Mineral matter (chlorine, iodine, sulphur, phosphorus, sodium, potassium, calcium, magnesium, iron)
6. Water
7. Vitamins
    a. anti-neuritic vitamin
    b. anti-ophthalmic vitamin
    c. anti-scorbutic vitamin
    d. anti-rachitic vitamin
8. Roughage (indigestible substance to aid peristalsis, such as reticular tissue of meat and cellulose of vegetables)

In addition another factor must be brought in to facilitate the maximum utilization of the adequate diet. This factor is sunlight. Its beneficial effects in tuberculosis has long been known. The work of McCollum and also of Hess has shown conclusively its therapeutic value in rickets. From the suggestive work of others it seems very likely that it will soon come to be regarded as an important instrument in the proper assimilation and utilization of the well balanced diet.

It is the opinion of the writer that the limelight of publicity is at present glowing too strongly on the vitamins. They are merely one cog in the wheel. The absence of any one of the items enumerated in the adequate diet may result in very serious derangements, some of which produce symptoms characteristic of an avitaminosis. To cite examples, E. A. Kohman has shown that the use of inadequate proteins results not merely in a lack of growth but in an edema resembling the wet type of beri-beri or the "hunger edema" prevalent in the late war zones. McCollum and associates have but recently announced that a type of ophthalmia, not due to starvation for fat-soluble vitamin A and not curable by its administration, could be caused by unsatisfactory relations in the inorganic portion of the diet. We are well acquainted with the significance of an oligemia or a hydremia conducive to edema. We are also well aware of the significance of a deficiency in the carbohydrate content and its resultng ketosis characteristic of a starvation or diabetic acidosis.

Yet in spite of the overemphasis at present placed upon the vitamins we cannot deny that their discovery has stimulated most beneficially research in the hitherto neglected field of nutrition. As a result modern medicine has gained a true insight into the cause, cure and prevention of the "deficiency diseases." It is giving greater thought and care to nutrition as a therapeutic measure. The medical journals carry more articles relative to diet than they ever have before. Some of the more brilliant contributions in the dietary treatment of disease have come in the last two or three years from McCann, who removed the dietary treatment of tuberculosis from empiricism and traditon; from Woodyatt, who placed the dietary control of diabetes on a scientific foundation; from Coleman, who worked out a logical diet for gastric ulcer.

Nor should we fail to mention the tremendous benefits in the field of pediatrics resulting from the application of the newer knowledge of nutriton. To say the least, there has been lately a remarkable decline in the mortality rate both in the young and in the adult. From 1911 to 1917 a decline in the mortality rate of over 7% is recorded for all ages, but the decline is most marked and most significant during the early years, being over 19.1% for the first year of life, 18.7% for the second year, 17.2% for the third year, and 15.2% for the fourth year.

It is interesting to note that in laying the foundation for the science of nutrition, one name, that of Elmer V. McCollum, stands preeminent. He has done much to determine the dietary deficiencies of various types of foods and how these deficiencies may be overcome by proper supplementing. He has discovered two of the four vitamins. His work on rickets will stand as a monument to his genius. Through his numerous brilliant papers, through his many public addresses and through his books, he has sought to bring home the valuable lessons gained in his laboratory. McCollum is to the science of nutrition, what Von Baer is to embryology, Pasteur to bacteriology and Virchow to pathology.

—Victor E. Levine.

RADIUM IN THE TREATMENT OF CANCER.

It seems that enough data has been compiled in connection with the cancer question to prove beyond all reasonable doubt that three remedies have been proven of value in the treatment of cancer. These are surgery, X ray, and radium. No one of these is sufficient in all cases, but every case is a law unto itself calling for a certain remedy or combination of remedies according to certain fundamental principles. These principles involve biology, physiology, pathology, anatomy, physics, mathematics and other basic sciences. As new facts are added to our basic sciences then new changes must be made in our choice of remedies. For instance the old conception of cancer as a solid mass like a stick or a stone in the flesh; the logical conclusion being a surgical operation to remove it. This was logical as to the premise on which it was founded but the premise was only a half fact and consequently results were not satisfactory. Operation alone did not cure, and while the profession stubbornly stuck to the idea based on insufficient knowledge of pathology, the laity, the fellows whose "bull was being gored," showed better sense by looking with suspicion on the single remedy, surgery, as all sufficient in cancer.

Later facts added to our knowledge of cancer showed that cancer extended far beyond the area in which it is primary. Glands were involved at a distance and the road travelled by the cancer cell in getting from the primary to the secondary area was found to be a contaminated field any part of which might become the starting point of a new malignant growth. Cancer of the breast for instance was not then just cancer of the breast but might be cancer of the breast and glands and all the area in between, and perhaps beyond, including fascia, muscle, periosteum, bone and skin. Cells so small they could not be seen or felt could cause new cancer growth. The cancer area instead of being a two inch area might extend over two feet.

It seems in keeping with the eternal fitness of things that as these fects are brought to us in regard to the pathology of cancer, we are at the same time provided with a means of combatting these wandering, migratory, malignant cells thereby making surgery, when necessary, safe in these conditions. Animal experiments (and later experiments on humans) have shown that it is possible to sterilize an area of these disengaged cancer emboli in a very definite way with rays from radium and to a lesser degree with rays from X ray, the difference being that the factor of safety with radium is about 6 to 1 while with X ray it is about 2 to 1. This means that with X ray it takes twice as big a dose to kill normal cells as carcinoma cells while with the much smaller wave length of radium rays it takes six times the cancer killing dose to kill normal healthy cells. The advantage is largely in favor of radium but where a large area is to be covered as in cancer of the breast a combination of the two gives the best results; the radium being used where intensive effect is desired (primary tumor and glands) and X ray used where extensive effect is desired (as fascia, muscles, skin, etc). Radium buried in the wound kills out any accidental contamination of the operation field and this method is now being used by some of the leading authorities on breast surgery. Handley of Middlesex Hospital in London reports a very great increase in cures since adopting this technique. The author has reduced his first year recurrences from 75% to 25%. Radium has been very effective in local superficial cancer in which over 90% cures may be expected in the hands of expert radium users, but its greatest service to humanity is probably in breast cancer, as surgery alone in this disease has been hopelessly "up against a stone wall."

Cancer of the cervix has been considered perhaps the most hopeless form of cancer as recurrences take place after operation no matter how early the case may be seen and operated on. The massage, handling and squeezing of diseased tissue incident to removal of the uterus squeezes cancer cell bearing lymph into regions far beyond the reach of the knife where they grow up as secondary cancers, and live, viable, transplantable cancer cells coming from the surface of the cancer mass line the whole vaginal tract and promptly implant themselves during the operation in the raw surface where the vagina is cut across, thus giving the recurrence in the scar which we almost invariably get. The gentle application of a radium tube in such a case of early small uncomplicated and definitely local cancer of the cervix, without a tenaculum, curette or any unnecessary traumatism or handling will cure just as large a percent of cases as in cancer of the lip or other superficial local cancer. In the author's work extending over a period of nearly ten years, over 80% of such cases have resulted in apparent cures running from two to seven years. Such instances might be multiplied to a great length but the important point is this: Cancer in its early stages is local and curable by the intelligent application of radium. In the same class of cases surgery and X ray used as single remedies may be depended on only to remove the disease temporarily. The large number of recurrences seen in every cancer hospital after surgical removal used as a single remedy amply prove that neither of these agents may be depended on as a single remedy in early local cancer. Radium on account of its exceeding great intensive effect, easy healing, and minimum destructive effect on normal tissue may be depended on as an efficient curative agent in early local cancer and is the only remedy that has stood the test of time as a successful remedy in this disease.

In the medium advanced case, in which there is cancer in the region and in the first group of glands and the primary mass is too large to ray through successfully with radium, the X ray proves a valuable accessory and gentle surgery may be used to remove the pre-rayed cancer mass and pre-rayed glands.

In the third group of cases where the disease is widespread, the palliative and extensive effect of the X ray is at its best, surgery is out of the question, and radium is only of benefit in such cases locally.

It must be understood when dealing with rays that the rays from radium and X ray are entirely different from the standpoint of physics and from the standpoint of biological reaction. The hardest gamma rays from a Coolidge tube carrying 200,000 volts measure one-half an Angstrom unit. The softest gamma rays from radium measure 1/15 of an Angstrom unit. It is evident that a tube must be constructed that will carry well over a million volts to secure X rays which will approach even the softest of radium gamma rays. Cancer cells may be killed to a distance of one inch, two, three or four inches from the radium tube according to the amount used and the time it is left in place.

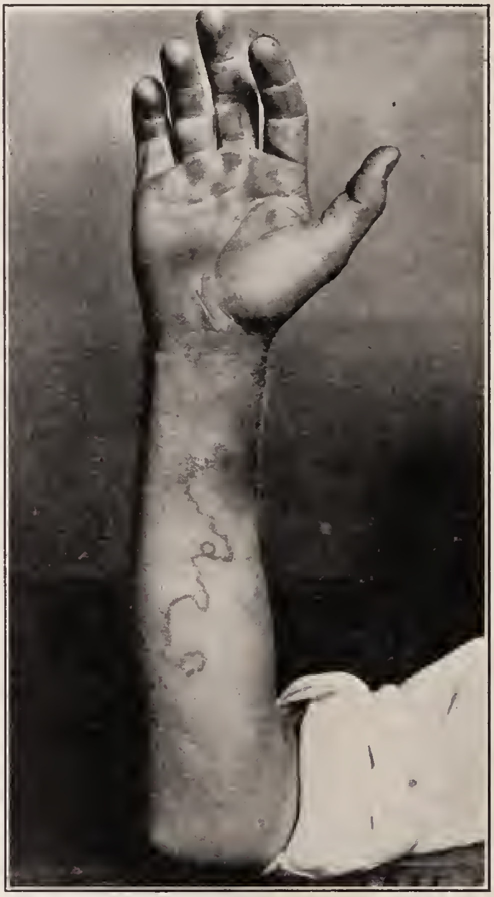
To sum up: Cancer may be divided in three stages. 1. Local cancer with no lymphatics or glands involved. 2. Medium advanced cancer in which the region and regional lymph vessels and glands are involved. 3. Advanced cancer, in which distant glands and organs are involved. In the first group radium is the treatment of choice and if properly used may be depended on for permanent cure. In the second group radium, surgery and X ray should be used and the percentage of cures depends on the extent of the disease, the gentleness of the surgery and the skill with which the X ray is used. In the third group no cure is ever effected; X ray is the treatment of choice and is palliative.

—D. T. Quigley.

REPORT OF FIRST CASE OF CREEPING DISEASE IN NEBRASKA.

Alfred Schalek, M. D., Omaha, Neb.

C. W. R., 20 years of age, just returned from a cattle ranch in Gordon, Cherry County, Nebraska, complains of an eruption on the flexor surface of the right forearm. As well as he remembers, he thinks that he was bitten by a fly about two inches above the wrist. At this place there was, at the time of the examination, a patch about one-half inch in diameter, slightly inflamed, oozing and crusting. From this, as seen by the accompanying photograph, there had started a slightly raised, erythematous, thread-like line, traveling upward in a tortuous, irregular course, at times doubling back on itself, to a distance of five inches. The patient does not complain of any marked subjective troubles and states that the line is extending half an inch or more daily. At times he thought that he could see a minute black speck within the line.

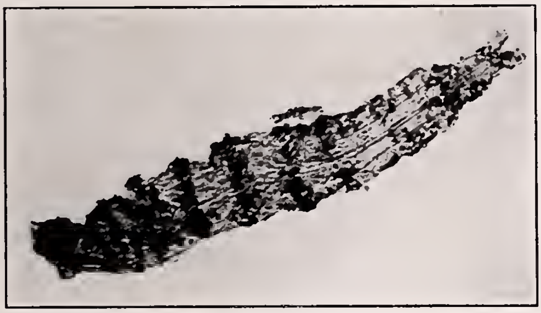


This eruption is caused by a minute migrating larva. While this disease is not infrequent in southern Russia, it is rare in this country and was not described in the United States until 1902. As far as the writer knows, this is the first case reported in Nebraska, but it is possible that it is more frequent, though not recognized, and this report may draw the attention to more cases of its kind.

The northwestern section of Nebraska is given over mainly to the raising of horses and cattle. The botfly—gastrophilus equi—lays its eggs during the latter part of the summer in the hair of the animal, where later the larvae are hatched. From there these may burrow into the skin or be transferred through the licking of the horse into the gastrointestinal tract. When favorable opportunity arrives, which, however, must be exceptional, the larva may invade the human skin. The picture which it then produces by its migration is unique.

The parasite tunnels very superficially through the epidermis and travels at the rate of one to three inches daily, sometimes more actively at night. As a rule, only one larva is present and is located at the extreme end of the burrow. It may be seen sometimes by pressing the blood out of the skin with a piece of glass, when it shows as a tiny black speck. The larva is only exceptionally recovered and it was fortunate that the writer was successful in lifting it out with a sharp, narrow pointed knife.

These cases are quickly cured when the offending parasite is destroyed and the terminal end of the line cauterized. Injection of a few drops of chloroform has been used successfully to kill the larva, when it could not be removed bodily.



Larva Gastrophilus. Photograph, low magnification of paraite recovered from terminal end of lesion.

Dr. E. T. Manning mounted and photographed the larva recovered in this case, and kindly consented to discuss its biology:

"The parasite belongs to the class insecta, order diptera, genus gastrophilus. The larva is about one millimeter in length and consists of ten segments and hooklets. At the head end apparently there are two sucker-like appendages.

The specimen was prepared by fixing it in acetone then clearing in alcohol and mounted in pure cedar oil."

HUMAN ACTINOMYCOSIS—REPORTS WANTED.

To the Editor: I am endeavoring to make a complete study of the distribution of human actinomycosis in this country. The number of cases reported in the literature is surprisingly small, and I know that the disease is not so rare as is sometimes thought. I shall greatly appreciate hearing directly from any one who has had experience with this disease, and desire to know concerning case histories the following: age, sex, occupation, residence, state in which the disease was contracted, location of lesion, duration of symptoms, and any special points of interest connected with the treatment, outcome of the disease, or necropsy findings.

A. H. Sanford, M. D., Mayo Clinic,
Rochester, Minnesota.

PERHAPS OUR FRIENDS ARE JOKING.

"Dear Dr. Long:—You are to be commended and congratulated upon the excellent work you are doing with the State Journal. It is certainly a creditable magazine and all members of our society have good reason to be proud of it.

—J. E. S."

"My Dear Dr. Long:

Your request for an 'imperishable' contribution in verse I will comply with, but have some doubts if this old machine will hold up under the strain put upon it.

Sincerely and Fraternally yours,
A. L. Bixby."

BEFORE AND AFTER.

Father is sick, but never fear,
The doctor's here.
With healing dope, and hope, and cheer,
The doctor's here.
Real thrills of confidence pervade
The household—no one is afraid;
Assurance comes to hearts dismayed,
The doctor's here.

Time passes, weeks and months, a year,
The doctor's here.
Dad's well—why does he disappear?
The doctor's here.
This time he brings his modest bill—
No welcome, there is no one ill—
The house is locked, and all is still;
The doctor's here.

—A. L. BIXBY.

THE SOCIETIES.

The **Adams County Medical Society** Dec. 6, elected Dr. E. B. Hamel, president; Dr. W. T. Carson, secretary-treasurer, and Dr. W. S. Fast, delegate.

The **Douglas County Medical Society** at the annual meeting at the University club, Dec. 12, elected Dr. J. M. Patton, president and reelected Dr. Roy A. Dodge, secretary-treasurer.

Dr. R. M. Farr, Minneapolis, gave an address on "Local Anaesthesia."

On December 18 the **Lincoln District Dental Society** had as its guest Dr. A. C. Potter of St. Paul, Minn. He spoke in the afternoon on, "X ray Interpretations" and in the evening on, "Infections". The members of the Lancaster County Medical Society were invited to be present.

The **Box Butte County Medical Society** at the annual business meeting December 7, elected Dr. J. P. Weyrens, president, reelected Dr. George J. Hand, secretary-treasurer, and Dr. C. W. Slagle, delegate.

At the annual business meeting of the **Lancaster County Medical Society** Dr. J. J. Hompes was elected president; Dr. D. D. Sanderson was reelected secretary, and Drs. George W. Covey and H. H.

Waite, delegates. By unanimous vote a motion was passed that the secretary be sent to the next meeting of the American Medical Association at the expense of the society.

At the regular semi-monthly meeting of the **Lancaster County Medical Society,** November 18, Dr. A. J. Carlson, professor of physiology of the University of Chicago. lectured on, "Recent Advances in the Physiology of Alimentary Canal."

Dr. Carlson confined his remarks principally to the stomach, the lower one-third of the oesophagus and duodenum. He pointed out many apparent facts that materially change our former conclusions. A few of which may be summarized as: The hydrochloric acid of the stomach is not necessary to assist the pancreas to secrete; that the splanchnic nervous system to this area carries a motor as well as a sensory fiber and extends as high as the lower one-third of the esophagus; that the acid content of the stomach secretion is materially less than was formerly supposed; that perfectly normal individuals often have very little gastric secretion; that the pain of ulcers varies with and is simultaneous to the contraction of the stomach; that acid will oftentimes assist in relieving the pain and alkalies will fail.

Dr. Carlson took occasion to condemn the use of the stomach tube, showing that very little or no information of value is derived by its use. The entire lecture was full of facts that aid very materially in the every day practice of medicine.

The **Thayer County Medical Society** held its annual meeting at Hebron, November 9th. Dr. O. F. Dierker read a paper on "Foci of Infection." Dr. P. H. Bartholemew of Lincoln was present and gave an informal talk. In the evening he addressed a public meeting, under the auspices of the Thayer County Medical Society, on "The Prevention of Cancer." Dr. P. E. Milbourne, Davenport was elected president, and Dr. Rudolph F. Decker, Byron, was reelected secretary-treasurer. After the meeting the Blue Valley Hospital served coffee and sandwiches to the members of the society.

The annual meeting of the **Cass County Medical Society** was held in Weeping Water, November 24. After a fine dinner the election of officers was held and the following elected: Dr. J. W. Thomas, Nehawka, Pres.; Dr. O. E. Liston, Elmwood. Sec.-Treas.; Dr. A. R. Hornbeck, Murdock, and Dr. W. M. Barritt, Union, were elected delegate and alternate to the State Medical Association. Following election of officers, Dr. A. F. Tyler, of Omaha, gave an address on "Treatment of Skin Diseases with X ray and Radium."

The **Keith County Medical Society,** which embraces the field of Keith and Perkins counties and the towns just across the lines in Lincoln and Duel counties, recently elected officers for 1923 as follows: Dr. C. C. Wallingford, Ogallala, president; Dr. Harry E. Briggs, Paxton, secretary-treasurer; Dr. C. H. Smith. Big Springs, delegate. This society starts out with an auspicious program for the year 1923. Bi-monthly meetings are planned—January, March, May, July, September, November. The meeting places are to change from town to town and some will drive fifty miles to the place of meeting. The July meeting will resolve itself into an annual picnic with the doctor's families as guests.

At the meeting of the **Madison County Medical Society,** Norfolk, Dec. 12. a symposium on pneumonia was the feature. Dr. W. R. Peters, Stanton, "Etiology and Pathology"; Dr. E. O. Wilson, Madison, "Symptoms and Diagnosis"; Dr. A. M. Sonneland, Norfolk, "Treatment." Dr. L. L. Nelson, Norfolk. was elected president, and Dr. A. E. Gadbois, Norfolk, was reelected secretary-treasurer.

The **Eleventh Councilor District Medical Society** will form a permanent organization at Ogallala, Jan. 10. There are but two county societies in this district, Lincoln and Keith.

FOR SALE—Unopposed N. W. Nebraska practice. Past average income for eight years $5,000.00. Will turn over to purchaser property that now has better than a 9% rental income, with enough room for offices and living rooms in addition. Terms to suit to right party. City lights and water. Good school. Will consider a term lease on these rooms at $45.00 per month. Address Box B c/o this Journal.

NOTES ABOUT THE DOCTOR.

Mrs. G. W. Dishong is the new president of the Doctors' Wives' Club. Omaha.

Dr. S. G. Allen, for many years a physician at Clarkson, lately of Scottsbluff, has located at Stanton.

Dr. H. J. Lehnhoff, Lincoln, has been reappointed a member of the educational examining board in medicine.

Dr. A. E. Gadbois, Norfolk, made a trip to St. Louis during December to look in at the eye, ear, nose and throats clinics.

Dr. H. M. McClanahan, Omaha, goes to the Hot Springs of Arkansas for a short period of recreation the first of the year.

Dr. D. M. Nigro, Creighton medical graduate, assistant health commissioner, Kansas City, visited Omaha the first of December.

By a fire which destroyed the Odd Fellows Hall building, North Platte, Dr. Fred Wurtele whose office was in the building suffered the loss of his entire armamentarium.

Dr. S. A. Campbell, Norfolk, recently has been a patient at Augustana Hospital, Chicago having undergone an operation for caries of the maxillae.

Dr. R. B. Adams, our secretary, attended the Convention of State Secretaries in Chicago, Nov. 17-18

It appears that the only physician elected to the Nebraska legislature is Dr. E. A. Whitehead, Holdrege.

NECROLOGICAL.

Dr. George Ewh, New York University Medical College. 1878, for about fifty years a practitioner at Talmadge, died at the latter place last month.

Dr. H. P. Wekesser, University of Nebraska College of Medicine, 1908, a general practitioner and surgeon of Lincoln since graduation, died after an operation for appendicitis, December 15, aged about 42 years. Dr. Wekesser was of Russian birth and came to Lincoln with Russian colonists when a child. He was essentially a self made man and a tireless worker. He was president of the American Volga Relief Society. He is survived by a widow and two children.

LINCOLN NUMBER

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, February, 1923. No. 2

CONTENTS

Page

Preliminary Report of Results and Conclusion from One Year's Experience in High Voltage Roentgen Therapy, Roscoe L. Smith, M. D., Lincoln, Neb. 41

Nonspecific Parenteral Therapy, Carl H. Bastron, A. M., M. D.. Lincoln, Neb. 43

The Relationship Between Sinus Infection and Lower Respiratory Tract Infection, With Special Reference to Apical Signs in the Lung, George W. Covey, A. M., M. D., Lincoln, Neb. 47

A New Method of Treatment for Chronic Infections Involving Bone, H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb., Chief Surgeon Nebraska Orthopedic Hospital 50

Case Reports Illustrating the Accurate Treatment of Diabetes Mellitus, Miles J. Breuer, M. A., M. D., F. A. C. P., Lincoln, Neb. 52

Catheterization of the Duodenum, Clarence Emerson, Ph. D., M. D., F. A. C. S., Lincoln, Neb. 58

Page

Fulguration in the Treatment of Affections of the Lower Genito-Urinary Tract, Arbor D. Munger, B. Sc., M. D., Lincoln, Neb. 62

Modern Measures, Czar C. Johnson, M. D., Lincoln. Neb. 65

Modern Scope of Orthopedic Surgery, James E. M. Thomson, M. D., Lincoln, Neb. 67

EDITORIAL—

The Lancaster County Medical Society 70
Drug Therapeutics in Heart Disease 71
Water for the Baby 72
About Breeding 73

Necrological 74
Notes About the Doctor 75
The Societies 75
Hospital Notes 76
Meeting of the Board of Councilors 76

PRELIMINARY REPORT OF RESULTS AND CONCLUSION FROM ONE YEAR'S EXPERIENCE IN HIGH VOLTAGE ROENTGEN THERAPY.*

Roscoe L. Smith, M. D., Lincoln, Nebraska.

In considering the present day method of Roentgen treatment, it is only just that we mention the name of Professor Dessauer, who for several years prior to his success in 1914, spent his entire time on the physical investigation of radiation. He found by accurate measurement, that the failures from X ray treatment were due to insufficient penetration. He found the apparatus in use did not produce a lethal dose for malignant tissue. His investigations proved beyond a doubt, that failure was due primarily to the incorrect application, and to insufficient dosage. By increasing the focal skin distance, he found the depth dose was increased, and the surface dose decreased in proportion. Again, by heavy copper filtration, all the soft waves or undesirable radiation was absorbed by the copper, which fact has largely, if not entirely, eliminated the possibility of X ray burns. With these changes, together with the increase in voltage from 140,000 to 200,000 peak volts, the entire clinical picture has changed.

In the past, to have the desired effect on deep tissue, it was necessary to push the radiation to a point of serious skin burns. With Dessauer's method, skin reactions are eliminated and practically in all cases, the primary tumor disappears promptly. The method has been in use in Germany and France since

---

*Read before the Lancaster County Medical Society, Lincoln, October 7, 1922.

1914. In this country, it was first used by Dr. Milwee of Dallas, Texas, in June, 1921. Dr. Milwee was fortunate in having the first workable outfit of the high voltage type in this country, which in reality was an experimental machine, placed in his hands by the manufacturers, and it was not until November of 1921 that we were fortunate enough to secure an apparatus for our use in Lincoln.

Even as recently as November, 1921, the method was so untried in this country that there was practically no one to whom to turn for advice. We therefore, adopted the method of Dessauer and followed it as nearly as possible until February or March of this year, when we were able to secure the services of Albert Bachem, an associate physicist of Professor Dessauer, who had spent several years with Dessauer in his investigations. We found from his measurements with the electroscope that our transformers were 20% under efficient as compared with the most ideal conditions. The Kelly-Koett factory immediately took up the matter with the view to modify and rebuild the apparatus to attain, if possible, ideal results. This was accomplished and we therefore, changed our equipment to the newer type and find a marked improvement in results over those which we obtained with the first apparatus.

During the past year, we have treated over 200 cases of malignant disease. Most of them have had extensive involvement and were undesirable patients from the standpoint of any type of treatment. Even in this class of cases, we have found the original tumor will disappear and in practically all cases the patients show marked improvement. In about half of the patients treated, the improvement was temporary and they remained well only a few months, as other additional areas were involved from metastasis which existed at the time treatment was administered. Fully one-half of those treated have remained well to date and to say the least, symptomatically cured. It is impossible to forecast the length of time they will remain free from their difficulty. We believe, however, the relief they have had is sufficient excuse for their treatment. Many times I have seen the most extensively involved cases clear up entirely and remain well to date. Such cases as cancer of the tongue, cancer of the penis, cancer of the uterus and cancer of the breast.

It is my opinion there has been no advance in medicine in recent years that shows such startling improvement in results as Dessauer's type of radiation on malignant tumors. From a surgical standpoint only a few cases of cancer are curable. That much, time and experience has taught all of us and it is this that has made us cast about for a new method which offers some hope of reducing the mortality. I am of the opinion that surgery is a very necessary part of the correct therapeutics on cancer, but think it should be used after the initial tumor has been reduced as much as possible with radiation, which requires a period of two months' time. After this change has taken place, I believe the original area involved should be excised as widely as possible, because of the possibility of recurrence at a later date. After a careful excision, the patient should again receive an additional Roentgen treatment.

The prognosis on cancer depends, not only on the stage in which the tumor is seen, but also on the proper management of its treatment. To cite a definite case, I take that of carcinoma of the rectum. I have seen several cases where the growth has occluded the lumen of the bowel. I have treated these patients until they were symptomatically well and in most cases the tumor disappeared and could not be palpated; all but one have remained well to date. This one was apparently well for a few weeks when his obstruction recurred so completely that it was necessary to do a colostomy. I would prefer and have advised the other patients to accept a surgical removal of the primarily involved gut. I am sorry to say they have not accepted my advice, because of their freedom from all symptoms. The same thing is true of carcinoma of the uterus. We have seen many cases, some postoperative, others preoperative. Results are similar and patients refuse surgery. The ideal would be, a thorough radiation of an early malignant tumor with excision at the end of two months and another thorough radiation a few weeks after the operation.

One of the most important, if not the most important, detail in Roentgen therapy is the estimation of the correct dosage. Since it is necessary to ray a patient to the point of destroying the malignant tissue, you can readily understand the effect on normal tissue. Fortunately, normal tissue will not succumb to the same amount of radiation that malignant cells do. For instance, a lethal dose for a carcinomatous cell is about 90% of an erythema skin dose, connective tissue withstands 180%, the bladder and intestinal mucosa about 130%. This leaves only a short range between the death dose for a carcinomatous cell and the death dose for those of the bladder and bowel mucosa. If a patient receives too much radiation, death of the individual is the natural result. If the carcinomatous cell receives less than 90% of an erythema skin dose, we fail to attain our desired results and the patient succumbs to his primary lesion. It is most important, therefore, that the correct estimation of dosage be made on every patient, and since every patient is of different thickness and the tumor situated in different parts of the body, surrounded by different densities, each individual case must be calculated, accurately measured, and the dose estimated. This can be done only in one way and that is, to measure the output of a given transformer after it has been accurately fazed in by an electroscope, the shere-gap adjusted and all meters reading correctly. The output is then measured on the best working point of a given transformer. The output must be measured for different depths, since it will be necessary to treat lesions located on the skin, 1 cm. under the skin, or several cm. under the skin. When all measurements are complete, an efficiency curve is then drawn, which allows the correct estimation of a given depth dose for any depth desired.

It is seldom possible that a full depth dose can be administered through one port of entry; usually two to four ports are required to deliver the desired depth dose. This complicates the procedure considerably, since we have to consider, not only the primary beam emanating from the focal point of the X ray tube, but the secondary radiation that takes place in the body, and the depth it travels from the original tissue radiated.

Dessauer, however, has made it possible to make a correct estimation of the secondary radiation and judge accurately the correct amount of radiation necessary to deliver the depth dose when overlapping tissue occurs. In brief, Dessauer considers only the type and hardness of the ray that reaches the desired depth. Not only the transformer efficiency must be standardized, but also the efficiency of each tube that is used. In our experience we have found standard high voltage Roentgen tubes that have tested out 25% under the guaranteed efficiency. These tubes are unfit for use and must be discarded, and unless the tubes are tested carefully, it is impossible to know the type and amount of energy delivered to the tumor.

NONSPECIFIC PARENTERAL THERAPY.*

Carl H. Bastron, A. M., M. D., Lincoln, Neb.

By nonspecific parenteral therapy is meant the administration subcutaneously, intramuscularly or intravenously of substances, protein and otherwise, which cause an increase in the organism of the resisting and fighting forces of an unspecific nature. This form of therapy is not strictly new; it was first used in 1908 by Nolf (1) of Belgium, in the treatment of hemorrhagic diatheses to increase the coagulability of the blood. Active interest, however, did not become manifest until about 1916, when injection of milk, peptone, and nonspecific vaccines began to be employed in the treatment of various infectious diseases, chiefly, however, rheumatic joint diseases. Since then a great number of other substances, chiefly of a protein nature, have been advocated, such as typhoid vaccine, mixed vaccines, casein, proteoses, fibrin (digested), the protein silver salts, turpentine, and others. Of these, milk and turpentine are given intramuscularly, while the others are administered either intravenously or intramuscularly.

Even more varied than the substances are the pathologic conditions in which foreign protein therapy is said to be of benefit. According to different writers on the subject, this form of treatment is of more or less benefit in practically every known so-called "medical" disease, the benefit varying between slight transient improvement and absolute cure.

It is an old observation (2) that skin diseases occasionally heal following an acute febrile disease. While this observation does not explain the relation between the febrile disease and the healing of an existing dermatitis, it does furnish the suggestion that the reaction of the body to the infection is instrumental in curing the skin disease.

---

*Read before the Nebraska State Medical Assn., Omaha. April 27, 1922.

According to Lindig (3) the active principle of milk is casein, and he contends that the natural resistance of infants to a number of infectious diseases is due to the presence in their blood of a large amount of casein-splitting ferments. But many other substances are equally as effective as casein without there being any "splitting" enzymes against them in the blood.

The ferment theory is championed in other quarters. Jobling and Peterson (4) in 1915 stated that ferments (protease and ereptase) probably aid in detoxication; the toxines or protein-split products are hydrolyzed by ferments to lower nontoxic forms. These authors further state that the antiferment power of the blood is due to lipoids in the form of unsaturated fatty acids; absorption of lipoids from the surface of bacteria causes their destruction. (Injection of small doses of foreign proteins or silver salts (5) leads to an increase in the lipoid content of the blood, while large doses are followed at first by a diminution, later by an increase beyond the previous level). Somewhat similar is the view advanced by Fritz Munk, (3) who argues that the physical changes following foreign protein injections (decline in complement, rise in agglutinins, etc.) must exert some influence on the tissues. The process of agglutination is accompanied by a change in surface tension in and about the cells, whereby the dispersion is lowered by the reduction of amicrons to submicrons. This colloidal change in the serum brings about in the cell a constantly changing physical balance. The reaction of the cells becomes heightened within certain limits of reversibility, corresponding to a heightened degree of vitality, beyond which, in the state of irreversibility, it means the death of the cell.

H. Freund (6) states that the essential part of the action is the change in the reaction of organs with autonomic innervation, particularly the vessels. What causes this reaction is not known. Alcoholic extracts were made of blood before it had time to undergo appreciable changes outside the body, and these extracts tested. It was found that extracts from rabbits with coccidiosis of the liver, or rabbits treated beforehand with casein or X ray, showed a reacting substance, which was absent in extracts from normal rabbits. If such extracts were tested on a frog heart preparation, a purely dilatory effect was obtained when the blood was withdrawn 1-3 hours after the rabbit had received the treatment, while in extracts from blood removed 2-3 days after treatment, purely contractile responses were obtained. Between these outer limits both reactions could be obtained.

The increase in bactericidal activity of the blood after protein injections has been definitely proved(6). Normal rabbit's blood in circulation has no anthracocidal substances, but such substances are found in blood platelets of rabbits. Serum and plasma of normal rabbits and rabbits treated with various protein substances was tested against anthrax bacilli. Serum and plasma from normal rabbits showed traces of anthracocidal substances. Serum and plasma from rabbits treated with small doses of various protein showed greatly augmented anthracocidal powers, killing 1000 organisms in 4-6 hrs.; while plasma and blood from rabbits treated with very large doses of foreign proteins showed a total absence of blood platelets, and 1000 organisms after 6 hrs. had greatly increased. It thus appears that blood platelets take part in the nonspecific protein reaction, by their disintegration.

C. Funk(7) thinks that the production of antibodies is a secretory process, and can be stimulated in various ways.

From these experimental investigations it would appear that parenteral therapy owes its beneficial effects in disease partly to its power to increase the ferments of the body, partly to an augmentation of the lipoids, and partly to an increase and mobilization of bactericidal substances, as well as to changes in the colloid balance and the stimulation of leukocytosis.

All substances used in parenteral therapy resemble each other in that they produce similar reactions and bring about like therapeutic effects. However, these substances differ considerably in the degree of reaction and therapeutic effect each is capable of producing. Intravenously, casein, peptone and silver colloids, as a rule, produce much milder reactions than bacterial vaccines. It is still to be determined whether the beneficial effect of protein therapy is part or the result of the reaction it produces in the organism, or whether this effect can be obtained without inducing a so-called reaction(8). In the first years of protein therapy it was generally held that favorable therapeutic action depended on pronounced reactions, and that if the reactions fell out, no improvement was to be looked forward to. In the last year or two the view has gradually been gaining acceptance that there need be no apparent reaction to cause favorable responses to the injections, in fact, severe reactions are to be avoided.

A typical protein reaction, or protein shock, consists of a more or less severe chill 1-3 hrs. after intravenous injection, followed by a rise in temperature, sweating, increased pulse and respiration, headache and transitory aggravation of the local signs of the infection—such as pain, redness and swelling. A mild reaction may be no more than a passing chilliness and malaise, while the severe ones may be so violent as to be indistinguishable from typical shock—rigor, cyanosis, rapid pulse, dyspnea, abdominal distress, high fever, nausea and vomiting, and profuse sweating and weakness. Leukopenia is a very constant phase of the early stage of the reaction, but is very transitory, being followed in a few hours by a rapidly rising leukocytosis, which latter generally returns to normal at the end of 24 hrs. Thus a reaction has a negative and a positive phase, the former being represented by chill, pallor, weakness, apyrexia and leukopenia, while the latter is characterized by fever, increased pulse, heightened inflammation and leukocytosis.

The rarity of anaphylactic reactions with milk injections has been attributed to the probable fact that milk by mouth may cause anergy(9).

Theoretically foreign protein therapy should be applicable wherever mobilization and augmentation of the body's defensive and fighting powers are of value. This, perhaps, amounts to saying that the type of therapy under consideration is indicated in the cure or amelioration of disease. Indeed, in reviewing the already very extensive literature on this subject one finds foreign proteins used and recommended for the treatment of practically every known disease—always excepting, of course, purely surgical diseases and other obvious states and conditions.

Good results are being reported in the arthritides, especially the acute and subacute nongonorrheal forms, with various forms of proteins, but chiefly typhoid vaccine, in this country, milk or casein in Europe. Isolated reports claiming good results in gonorrheal and tuberculous joint diseases, as well as the chronic types of arthritis with deformity, are on record. (10-20 incl.)

Brilliant results are reported as a whole in local infections, such as furunculosis, infections of fingers, hands, etc., with lympangitis; in Bartholinitis, buboes, epididymitis, prostatitis, adenitis and similar ailments. (21-24 incl.).

In dermatology the results are less spectacular but sufficiently noticeable in the inflammatory types of skin diseases, such as impetigo, herpes, phagedenic chancres with edema, post-salvarsan exanthems, urticaria, erythema multiforme, and even pemphigus. Several permanent cures are on record in the latter condition. (25, 26, 23, 15.)

Very favorable results are obtained by most of the gynecologists who have used foreign proteins extensively in adnexitis and post-partum or post-abortum fever. (27-33 incl.).

Among afflictions of the eye especial mention for good results deserve corneal ulcer, iridocyclitis, and keratitis (15, 34, 35, 36).

A good deal of uncertainty still exists in regard to the value of this form of treatment in infectious diseases. Theoretically, it is difficult to see any advantage from it in such diseases as pneumonia, typhoid and septicemia, where the disease fighting factors of the organisms are already being stimulated to the utmost. On the other hand, good results might be looked for in mild chronic diseases, such as gout, rheumatism, neuralgia, neuritis, colitis, pyelitis, and others. (12, 37, 23, 38, 39, 7.) In other words, if the virtue of parenteral therapy is the production of active immunity, it finds its chief application in the treatment of those conditions against which the organism's reacting power is not made sufficiently effective.

Most of the difficulties of parenteral protein therapy are encountered in the problem of dosage. Available data are mostly vague on this point, but agree in the following particulars:

1. The optimal reaction must be determined by experience(40).

2. Begin with small doses and gradually increase.

3. As much as possible, avoid violent reactions. In ambulant patients try to avoid any reactions which will cause discomfort.

4. Treat chronic cases with small, gradually increasing doses; treat acute cases with maximal doses given at short intervals.

5. Use smaller doses for intravenous than for intramuscular injection.

6. The dosage should be individualized. The age, sex, constitution of the individual, as well as the disease, are factors to be taken into consideration.

7. The following dictum, advanced by Arndt and Schulz(23), very aptly expresses the principle underlying foreign protein therapy, and should always be kept in mind in determining dosage. They say that "weak irritants stimulate function; moderately strong ones enhance it; strong ones interfere with, and still stronger ones paralyze function."

Sterile milk is given intramuscularly in doses of 5-10 cc. as often as every third to every seventh day, three to eight doses being an average number.

Casein is administered intramuscularly in ¼ to 1 cc. amounts of a 5% solution; succeeding doses can be raised to 1 to 5 cc.

Peptone is usually given intravenously, the dose most often employed being 5 to 10 cc. of a 10% solution—a very large dose, sufficient to produce a marked reaction.

Killed typhoid bacilli are administered either as the stock vaccine or as a saline suspension made from fresh cultures. The average dose is 50 million organisms — a so-called reaction dose.

Turpentine is always given deep upon the periosteum, usually that of the ilium in the post-axillary line, two to three finger breadth below the anterior superior spine. The dose is 0.3 to 1 cc. of a 20% olive oil preparation, to which some add some local anaesthetic in 0.5% strength. As a rule from four to six doses are given at two to five day intervals.

REFERENCES.

1. Nolf, P.: Proteosotherapy by the Intravenous Method, Jour. Am. Med. Assn., Nov. 22, 1919, p. 1574.

2. Stoeber, Christian. Zur Caseosanbehandlung van Haut und Geschlechtskrankheiten, Dtsch. med. Wochenschr.. May 5, 1921, p. 502.

3. Munk, Fritz: Ueber die Therapeutische Wirkung der Proteinkorper, Dtsch. med. Wochenschr., Febr. 3, 1921, p. 119.

4. Boyd William: Some uses of Nonspecific Protein Therapy, Jour. Lab. and Clin. Med., Nov., 1919, p. 88.

5. Gabbe, Erich: Vereanderungen der Lipoidmenge des Blutes bei Reiztherapie. Dtsch. med. Wochenschr., Nov. 17, 1921, p. 1405.

6. Dresel, E. G. and H. Freund: Experimentelles zur sogenannten Proteinkoerpertherapie. Dtsch. med. Wochenschr., Sep. 29, 1921, p. 1180.

7. Funk, C.: Percutaneous Protein Therapy, Jour. Am. Med. Assn., Nov. 12, 1921, p. 1610; abstract.

8. Behne, Kurt: Experimentelle Untersuchungen ueber das Wesen der Kaseosanwirkung. Dtsch. med. Wochenschr., May 26, 1921, p. 583.

9. Ryhiner, Peter: Parenteral Injection of Milk in Therapeutics, Jour. Am. Med. Assn., Nov. 1, 1919, p. 1398, abstr.

10. Saphier, Johann: Behandlung des Tripperrheumatismus. Dtsch. med. Wochenschr., June 23, 1921, p. 727, abstr.

11. Klingmueller. D.: Behandlung der Haut und Geschlechskrankheiten mit Unspezifischen Stoffen, Dtsch. med. Wochenschr., Aug. 4, 1921, p. 916.

12. Rolly, Fr.: Reisztherapie, Dtsch. med. Wochenschr., Aug. 11, 1921, p. 945, abstr.

13. Meyer-Bisch: Behandlung chronisch Deformierender Gelenkerkrankungen mit Schwefel, Dtsch. med. Wochenschr., May 26, 1921, p. 605, abstr.

14. Schwalb, Joh.. Sanarthritbehandlung Subakuter und Chronircher Gelenkerkrankungen. Dtsch. med. Wochenschr., Sept. 21, 1921, p. 1041. abstr.

15. Schittenhelm, A.: Proteinkoerpertherapie, Dtsch. med. Wochenschr., Dec. 15, 1921, p. 1538, abstr.

16. Lyter, J. C.: Treatment of Acute Rheumatic Fever. Jour. Am. Med. Assn., Jan. 5, 1918, p. 57, abstr.

17. Cecil, R. L.: Acute Arthritis Treated by Intravenous Injection of Foreign Proteins, Jour. Am. Med. Assn., Jan. 12, 1918, p. 125, abstr.

18. Snyder, R. G.: Clinical Report on Nonspecific Protein Therapy in Arthritis, Jour. Am. Med. Assn., Sept. 21, 1918, p. 1005, abstr.

19. Trossarello, M.: Injections of Milk in Venereal Disease, Jour. Am. Med. Assn., June 26, 1920, p. 1802, abstr.

20. Uddgren, Gerda: Parenteral Protein Therapy, Jour. Am. Med. Assn., Oct. 22, 1921. p. 380, abstr.

21. Langer: Proteinkoerpertherapie bei Gonorrhoischen Komplikationen, Dtsch. med. Wochenschr. July 28, 1921, p. 876, abstr.

22. Gaertner, H.: Caseosanbehandlung, Dtsch. med. Wochenschr., Sept. 29, 1921, p. 1171. abstr.

23. Isacson, L.: Zur Parenteralen Kaseintherapie, Dtsch. med. Wochenschr., Nov. 10, 1921, p. 1359.

24. Corinaldesi, S.: Parenteral Injection of Milk, Jour. Am. Med. Assn., June 12, 1920, p. 1681, abstr.

25. Gewalt: Ueber Pemphigusbehandlung mit Terpentineinspritznungen, Dtsch. med. Wochenschr., Jan. 27, 1921, p. 104.

26. Luth, W.: Terpentin in der Dermatologie, Dtsch. med. Wochenschr., July 7, 1921, p. 776.

27. Liss: Zur Caseosantherapie in Geburtshilfe und Gynakologie, Dtsch. med. Wochenschr., April 7, 1921, p. 402.

28. Kronenberg, Walter: Terpentininjektionen bei Adnexerkrankungen, Dtsch. med. Wochenschr., May 5, 1921, p. 518, abstr.

29. Friedrich, Hans: Terpentinbehandlung Gynaekologischer Entzuendungen, Dtsch. med. Wochenschr., May 19, 1921, p. 575, abstr.

30. Zill, Ludwig: Leistungssteigernde Mittel bei der Behandlung Gonorrhoeischer Adnextumoren, Dtsch. med. Wochenschr., July 21, 1921, p. 846, abstr.

31. Weinzierl, Egon: Erfahrungen mit der Caseosantherapie, Dtsch. med. Wochenschr., Sept. 22, 1921, p. 1120.

32. Caseosan-Protein Therapie. Dtsch. med. Wochenschr., Nov. 24, 1921, p. 1446, abstr.

33. Schwarz, Walther: Terpichinbehandlung Chronisch Entzuendlicher Gynaekologischer Erkrankungen, Dtsch. med. Wochenschr., Dec. 29, 1921, p. 1584.

34. Anderson, C. L.: Protein Therapy in Eye Diseases, Jour. Am. Med. Assn., May 4, 1918, p. 1344, abstr.

35. Duran, B. Carreras: Parenteral Injections of Milk With Eye Diseases, Jour. Am. Med. Assn., Sept. 27, 1919, p. 1020, abstr.

36. Barrios, R. Martinez, Protein Therapy, Jour. Am. Med. Assn., Oct. 22, 1921, p. 1375, abstr.

37. Kaznelson: Praktische ,Proteinkoerpertherapie, Dtsch. med. Wochenschr., July 28, 1921, p. 874, abstr.

38. Roberts, Dudley, and Edward G. Cary: Bacterial Protein Injections in Influenzal Pneumonia, Journ. Am. Med. Assn., March 29, 1919. p. 922.

39. Cowie, David M., and Paul W. Beavan: Nonspecific Protein Therapy in Influenzal Pneumonia, Journ. Am. Med. Assn., April 19, 1919, p. 1117.

40. Zimmer, Arnold: Schwellenreiztherapie. Dtsch. med. Wochenschr., June 2. 1921, p. 636, abstr.

THE RELATIONSHIP BETWEEN SINUS INFECTION AND LOWER RESPIRATORY TRACT INFECTION, WITH SPECIAL REFERENCE TO APICAL SIGNS IN THE LUNG.*

George W. Covey, A. M.. M. D., Lincoln, Nebraska.

INTRODUCTION.

It has been my impression that many cases having infections of the upper respiratory tract, especially sinus infections, have a train of symptoms suggestive of pulmonary tuberculosis and may have definite chest findings. These findings are divided into two general types, those confined largely to the lower chest and those confined to the upper, usually one apex. It is my aim in this paper to call to mind the relationship between upper and lower respiratory tract infections, and to support my contention that certain cases having apical findings are actually tuberculous, and not so called apical catarrh.

In 1914 St. Clair Thomson(1) called attention to the frequent association of unsuspected sinus infection and symptoms and physical signs in other organs or systems of organs. He says: "The symptom which usually directs attention to suppurative sinusitis is the discharge of purulent matter from the nose; but what I wish to insist upon here is that, in a considerable number of instances, this symptom is absent or is not complained of; and that not infrequently it is some vague disturbance of health, some neighboring symptom or some more distant catastrophe, which is the first thing to direct our attention to the original purulent focus." Speaking of symptoms in the lower respiratory tract he says: "The same cause often explains the inveteracy of bronchorrhoea."

Since that time, especially during and since the influenza pandemic, there has been an undoubted increase in the number of cases of chronic suppurative sinusitis, with a corresponding increase in the complicating sequellae of these infections. One of these "distant catastrophes" has been the lower respiratory tract infection, and much has been written about it in recent years.

M. V. Mullin of Colorado Springs(2), in speaking of the association between accessory sinus disease and bronchiectasis, says: "Patients with bronchiectasis will usually be found to have a well-marked sinusitis, and the degree of bronchial infection is usually in proportion to the amount of sinus involvement present." Again, he calls attention to the simultaneous development of sinusitis and acute bronchitis or bronchopneumonia, and later of chronic bronchitis and bronchiectasis.

---

*Read before the Elkhorn Valley Med. Society, Norfolk, Neb., Oct. 4, 1922.

Many other authoritative articles could be quoted to prove that there is direct etiological relationship between upper respiratory infections, especially accessory sinus disease, and chronic chest infections; and further, any internist who is seeing many cases of chest disease has long since recognized this definite association. As I have stated in the beginning of my paper, these infections are of two types. Both usually present a symptom complex suggestive of pulmonary tuberculosis, such as loss of weight, easy fatigue, nervous instability, cough, fever, etc. In one type the physical findings in the chest are usually entirely or largely lower lobe findings, while in the other there are findings at one or the other apex which are indistinguishable from those of tuberculous involvement. Both groups of physical signs tend to clear up when the patient is relieved of his infection in the upper respiratory tract.

Are we dealing in both cases with the same type of infection, or are the cases with only apical involvement pulmonary tuberculosis? If there is a definite lymphatic path from the neck to the apex of the lung, then perhaps we can be safe in calling them apical catarrhs; if not, then why should we give up the old axiom that all chronic inflammatory processes in the upper half of the chest are tuberculous unless proven otherwise; and vice versa, those in the lower chest are nontuberculous unless proven tuberculous.

The question of the route which this infection travels from the upper to the lower levels is important and has been under contention. Some have maintained (but without anything amounting to lucid demonstration) that there is direct lymphatic connection between the cervical lymphatics and the lung, particularly the apex. Others, with apparent success, have contended that such direct connection does not exist. It has been shown fairly conclusively that infection may travel directly down the respiratory tract via the trachea and bronchii.

Mullin and Ryder(3) instilled India ink and suspension of tubercle bacilli into the nostrils of a series of rabbits. The instillations of ink were made in varying quantities, from one to eleven times, and the animals were killed from 30 minutes to 25 days after the first instillation. The postmortem examinations showed the following interesting findings:

1. The upper respiratory tract was free of carbon unless an instillation had been given just before the animal was killed.

2. The upper lobes of the lungs were always blackened, one more than the other, and occasionally the lower lobes showed carbon deposits.

3. Most of the pigment was contained in the large endothelial phagocytes, which were seen to be migrating along the lymphatic channels.

4. The peribronchial lymph nodes were always blackened.

5. The spleen and kidney always showed carbon deposits.

6. The cervical and mesenteric lymph nodes never contained carbon.

7. A suspension of human tubercle bacilli was given an animal in the same manner. Seven weeks later, at postmortem, massive tuberculous consolidation was found in the right upper and middle lobes. The peribronchial lymph nodes were also tuberculous. Nowhere else were any lesions found.

Later Mullin demonstrated in a similar manner that the route of lymphatic drainage to the lung from the accessory sinuses is as follows: "The lymph drainage of the antrum is by way of the submaxillary and deep cervical nodes. . . . From these nodes drainage passes onward by the cervical lymph ducts, the great veins, the right side of the heart and the pulmonary artery to the lungs. The frontal sinuses appear to drain by the same route."

Several important points are brought out in these researches. Firstly, two definite paths of infection are shown to exist between the upper and lower portions of the respiratory tract. In the lymphatic path, however, is interspersed the blood stream from the neck, through the right heart and pulmonary artery. Secondly, Mullin points out that a given infection passing over any path does not leave marks throughout its course. For instance, when tubercle suspension was instilled into the nose the result was a pathologic process over only a small part of the path travelled by the carbon suspension. We know that the portion of the path involved varies for different organisms. It would seem that the factors determining the point of involvement therefore are probably biological in character, such as the amount of aeration, specific affinity, and others.

Now let us for a moment consider the problems of tuberculous cervical adenitis. Many authorities could be quoted tending to show that tuberculosis usually does not travel from the cervical glands to the lung or vice versa. I will quote from only one, Richard H. Miller of the Massachusetts General Hospital(4).

"The relation between cervical adenitis and pulmonary tuberculosis is interesting. It has been shown that all these cervical lymphatics drain into the jugular trunk and thence to the right heart and lungs. Should tubercle bacilli break into the circulation in this manner we would expect a miliary tuberculosis—a sequel which, however, is rare. Van Zwalwenburg and Grabfield, from a large series of Roentgenray examinations, describe a shadow which they believe to be a thickening of the pleura over the apex, and which is seen in ten per cent of all cases; whereas in those showing tuberculous deposits in the faucial tonsils it is seen in 93 per cent and in cases with cervical adenitis it occurs in 59 per cent of the cases. They conclude that tubercle bacilli in the tonsil reach the apex of the lung by a direct line of communication through the cervical glands. I do not believe this to be so, and clinical evidence does not, in my opinion, bear it out. Wallgren in a careful examination of 516 cases of pulmonary tuberculosis found that this had been preceded by lumps in the neck in only 17 per cent of the cases. He was able to follow up 251 cases of tuberculous cervical adenitis and found that a great majority of these patients never developed pulmonary tuberculosis. . . Williams found that in families with an inherited predisposition to tuberculosis, those members who had suppurative tuberculous adenitis did not contract pulmonary tuberculosis, while those who did contract the latter did not have cervical glands."

If carbon instilled into the nostril of an animal travels the path given by Mullin, down the trachea and bronchi; if carbon injected into a maxillary sinus travels to the lung only after entering the blood stream; if there is little or no tendency for tuberculous cervical adenitis to give pulmonary infection and vice versa; if there is a known tendency for tubercle bacilli to select that part of the path outlined by instillations of carbon which is in the apex of the lung, and other bacteria in the lower portions of the lung; and if there is no direct lymphatic connection between the neck and the apex of the lung—all of which contentions seem to have been fairly well proven, then there seems to be no need to change our dictum that apex infections are tuberculous and base infections non-tuberculous unless proven otherwise.

The fact that these cases of apical infection clear up rapidly after operation on the sinuses has been set forth as good evidence against tuberculosis. This argument is not sound, as may be shown by a single instance. One of my associates attended a university girl who had been ill but a short time. Definite signs of active tuberculosis were found in one apex, and many tubercle bacilli were demonstrated a number of times in the sputum. Six weeks from the time of examination she had no cough or fever, had regained her weight, and no signs of activity could be elicited at the affected apex. Unfortunately a few months later she relaxed her efforts at treatment, became ill again, fell into the hands of a practitioner in some cult, and died of pulmonary tuberculosis.

I believe, therefore, that we do have two definite conditions in the lung as a result of sinus infections. One is a chronic bronchitis or bronchiectasis in the lower chest, which is the result of drainage down the trachea from the upper levels of the respiratory tract, while the other is an incipient pulmonary tuberculosis at the apex which is permitted to develop because the patient's resistance has been reduced by chronic sinus infection.

Why do these conditions clear up so promptly after operation on the sinuses? I believe that relieving the patient of one area of infection relieves the strain on his resisting powers so that he can concentrate all his energy on overcoming the tuberculous infection. In other words, had not this patient's resistance been reduced by the focal infection in the upper respiratory tract he would not have developed activity in his tuberculous lesion, and when his focal infection is relieved he promptly overcomes the tuberculous lesion.

It would follow, therefore that:

1. Every case with a history suggesting pulmonary tuberculosis—or better yet, every case coming for a complete examination, should receive a thorough nose and throat examination.

2. In the presence of pulmonary tuberculosis every area of infection in the upper respiratory tract should be cleaned up. This should be done with due care and judgment so that no harm may result from the operative procedure.

Summary:

1. Two types of infection exist in the lung in conjunction with sinus infection. One is basal and the other apical.

2. Two routes have been demonstrated from the sinus to the lung. One, down to the trachea; the other, lymphatic in part, but with a blood-stream path interspersed.

3. No direct lymphatic connection seems to exist between the neck and the lung.

4. Tuberculosis of the glands in the neck does not tend to pulmonary infection.

5. There seems to be no reason to suspect that lesions at the apex simulating tuberculosis are so-called apical catarrhs, but on the other hand I believe them to be tuberculous.

6. Every case having a symptom complex suggesting tuberculosis should have a thorough examination of the upper respiratory tract.

7. Every case of pulmonary tuberculosis should have the upper respiratory tract freed from infection.

REFERENCES.

(1) Thomson, St. Clair: Some of the Symptoms and Complications of Sinusitis; The Practitioner, London, June, 1914, p. 745.

(2) Mullin, M. V.: The Accessory Sinuses as an Etiologic Factor in Bronchiectasis; Annals of Otology, Rhinology and Laryngology, 30.683, Sept. 1921.

(3) Mullin, W. V., and Ryder, C. T., (Colorado Springs): American Review of Tuberculosis, 4:683, 1920.

(4) Miller. Richard H., Massachusetts General Hospital: Tuberculous Cervical Adenitis; Journal A. M. A., July 29, 1922.

A NEW METHOD OF TREATMENT FOR CHRONIC INFECTIONS INVOLVING BONE.

H. Winnett Orr, M. D., F. A. C. S., Lincoln, Neb., Chief Surgeon Nebraska Orthopedic Hospital.

For the past few years our attention has been turned very strongly toward the problem of the acute or chronic infected bone wound. This refers to the various forms of acute and chronic osteomyelitis as well as to compound bone injuries. So many phases of the problem have been thoroughly discussed in addresses and in our Journals, that it is sufficient simply to mention them. One need not refer in detail to many of the things that have been said on the subject.

Among the measures that we have been exhorted to employ are debridement with primary or with secondary closure of wounds, the Carrel-Dakin method, zinc solutions, etc. Secondary sterilization by operation and closure has been extensively employed, and all the old and new resources of asepsis and antisepsis in the treatment of chronic infections have been tried. In spite of all these, however, there still remain not only in the military hospitals but in civilian hospitals and in private homes, thousands of patients with chronic discharging infected sinuses which lead from the skin surface through openings large or small down to infected bone. These are accompanied in many instances by serious deformity or disability, of the affected part, whether the bones are those of the spine or of the extremities.

The writer of this paper has seen not only in print but in the military and civilian hospitals every phase of this problem. Not only that, he has himself during twenty years of practice tried most of the methods which with some of the new ones he thinks should now be discarded in the treatment of these conditions. Most of the methods have definitely been found to be wanting. The patients do not get well.

In spite of this fact these inefficient methods are still being employed by surgeons and physicians, in a vain effort to heal up sinuses that will not heal.

The writer believes that he has arrived at a fairly standard method which may be employed in the treatment of these conditions. He believes that it is possible to lay down a course which can be applied to practically all such cases, and by which uniform, symmetrical and greatly improved results may be obtained.

First of all one may say that entirely too much attention has been paid to the wound itself. This was so perfectly obvious during the war, (and the Carrel-Dakin method was partly to blame), that even then our voices were raised, though not too loudly, against the excess of enthusiasm for this method. Wound treatment, contrary to the impression of many surgeons, is usually of secondary importance to certain other things that will be mentioned except in the presence of the gas bacillus or the tetanus organism.

My attention has just been called again to a paragraph written in 1909 by Dr. M. B. Tinker of Ithaca, New York, and which he has just quoted and endorsed in another article in the Annals of Surgery of Jan., 1922. This fairly illustrates the attitude of most surgeons toward the wound question. "If our wound is aseptic, tetanus and blood poisoning are impossible; bony union and a movable joint (Figs. 1 and 2) are favored; osteomyelitis will not develop; and a useful, if not perfectly normal, extremity will usually be saved." As a matter of fact this paragraph is misleading as I will attempt to show. Dr. Tinker's statement must be qualified by other very important considerations such as anatomical reposition of parts about the wound at the time of injury or as soon after as possible, immobilization, splinting to prevent contracture, etc. Suitable precautions must be taken for position, range of motion, drainage, etc., as well as wound healing if the desired results for any particular patient is to be obtained. By such means the welfare of the patient, the function of the part and wound healing are all provided for.

The fundamental basis of the treatment which I propose is founded upon the principle of rest, and this applies to the wound and the wound surfaces as well as to the larger anatomical parts involved in the injury. First of all then, one must insist that at the time of injury, at the time of primary and secondary treatment, and throughout the entire course of the period of disability, there must be first, restoration of the injured parts to normal relationship; and second, immobilization and protection in correct position until complete healing has occurred. This may be accomplished either by plaster or by suitable splints.

As splints are usually put on, however, this is not accomplished at all. In many hospitals and in the hands of many surgeons, splints are a source of irritation rather than of relief. Complete immobilization in suitably prepared and properly applied splints never causes pain or disturbance. The same is true of the application of Plaster of Paris.

For the wound therefore, two conditions really must be complied with. First, if the wound is infected it must be drained; this applies of course to every part of the wound, no matter how deep or in how many directions it may extend. Second, while draining, it must be dressed in such a way that it is not daily or twice daily reinfected. This is a condition which is only occasionally satisfied. My criticisms of present day treatment of the conditions I have been discussing are that as a rule the parts are not placed in correct position, they are not adequately drained, and as dressed in the average hospital or dressed by the average surgeon, the infection is added to rather than reduced by the daily dressings that are done.

For the past two years especially I have been employing a method in which I have been careful to combine the features that I deem of the greatest importance to contribute to the recovery of such a patient. In operating for osteomyelitis of any kind or degree, the attempt is made to remove all infected tissue. This is usually done by "saucerizing" both soft tissue and bone as suggested by Carrell, Chutro, and others. The wound is cleaned up as thoroughly as possible, and the saucer like opening of both soft tissues and bone is gently packed with sterile vaselin and gauze. The whole area is then covered with dry sterile gauze and the entire limb or part encased in a well fitting cast of sufficient extent to completely immobilize the infected part. Casts are not split and no windows are cut. If there is no indication on account of a rise of temperature for a change in dressing, this dressing is left in place for ten days to two or three weeks. Occasionally on account of temperature or odor the dressings must be changed earlier. When the dressing is changed it is done by the surgeon or his first assistant. One of the principal points in the treatment is infrequent dressings. That is, rest to the wound.

At the time of changing dressings, it must be done with the same precautions as at the time of the original operation. The wound is cleansed, dried, painted with iodine, a sterile vaselin pack put on, and the whole bandaged into place without in any way seriously disturbing the part or the wound. It should be left at each dressing in much the same condition as at the time of the original operation and first dressing.

By this plan drainage is as free as may be required. As a rule the amount of drainage is small. If the wound has not been entirely cleaned up at the time of operation, or if one gets a mixed infection, there may of course, be complications as in any surgical wound.

One finds in doing these operations as in the secondary closures of soft part wounds that the patient often shows considerable ability to take care of organisms to which he has become accustomed (immunized).

Enough patients have now been treated by us by this method (25 to 30), so that one may say that it is possible to treat such conditions in this way with much better results than formerly and without danger. There have been no serious complications in any case. Several such conditions, even those that have been open for a long time, are soundly healed. On one or two occasions osteomyelitis even in subacute or the early chronic stage has been healed up by such an operation and a few dressings at intervals of ten days to two weeks. In others five or six dressings at intervals of ten days or a fortnight have been sufficient in cases where daily dressings had been done for many months before.

There are a number of other important advantages, such as shortening the hospital period, the very great relief to the patient on account of the infrequent dressings, and the simplicity of care from the standpoint of the surgeon. The writer is convinced that in many of these cases the frequent dressings, and the complicated technic of the Carrel-Dakin and similar methods, not only delays healing of the wound, but very greatly interferes with the securing of healing of soft parts and bones in the best functional position. The disturbance of splints, often held to be justifiable in wound treatment (especially in the Carrell-Dakin method) is in fact in such cases often a very serious matter.

And finally, it is desired to mention again some things that the writer has already emphasized; namely, that stiff joints, adherent muscles and tendons, and contracture deformities result not from immobilization, but from inflammation, and damage to, and adhesions of, soft parts as well as of joint surfaces. This is true as well of joints which become stiff as a result of irritative motion and extension of the infection as of those in which the entire joint is destroyed by a tuberculous infection. Real immobilization and real splints will protect all the parts in the vicinity of such wounds, and diminish rather than increase the amount of adhesions, stiffness, ankylosis, and disability when healing of the first damaged and infected parts has occurred.

CASE REPORTS ILLUSTRATING THE ACCURATE TREATMENT OF DIABETES MELLITUS.*

Miles J. Breuer, M. A., M. D., F. A. C. P., Lincoln, Nebraska.

Statistics have shown a remarkable decrease in the death rate in this country from diabetes mellitus in the past few years. There is no evidence of any of the other factors affecting the mortality from the disease having changed, while there have been great advances made in its treatment; and it seems reasonable to suppose that more accurate methods of management are responsible for the lowered death rate, as well as affording patients more comfort and freedom from complications.

---

*Read before a meeting of the Lancaster County Medical Society, Oct. 7, 1922.

In this paper, three cases will be discussed with a view to illustrating modern methods of treatment. In order to lay stress on the principles of treatment, rather than on the cases themselves, I have deviated a little from the conventional method of case presentation.

Case 1., is a nineteen-year-old boy, in whose urine sugar was first found two years ago. During that interval the management of his case has been very incompetently handled. There is no history of any other cases of diabetes in the family. The patient has had no severe infections since early childhood. His maximum past weight was 165 lbs. three years ago, which is excessive for a boy of 15 or 16, and is a finding present in 70 to 80% of the cases. His present weight is 123. Polyphagia, polydipsia, and polyuria are present.

There was a heavy reduction of Benedict's solution by a few drops of urine. It is usually advisable to identify the reducing substance in the urine as dextrose, as there is some possibility of error here; but in view of the numerous confirmatory findings, it was not considered necessary in this case. Acetone and diacetic acid were present in large quantities in the urine, and the alveolar CO_2 percentage was 4.2%. (In the past few years, the alveolar CO_2 percentage has become established as a fairly reliable method of estimating the degree of acidosis; only in acutely severe acidosis, in which the respiratory exchange is upset, is the method inaccurate).

The blood sugar in this case was 0.38%. The blood sugar determination is of diagnostic importance at this stage to distinguish between diabetes mellitus and renal diabetes. In renal diabetes, there is an increased permeability of the kidney, permitting an escape of sugar with a normal blood sugar content, and a glycosuria without the metabolic disorders and the complications of diabetes mellitus. If there is no hyperglycemia, there is no diabetes.

The blood sugar content at this stage also gives some idea as to the severity of the disease. 0.38% is a high figure, and bears out the later findings pointing to the fact that this is a case of severe diabetes.

The next thing indicated is a thorough and exhaustive examination of the patient for complications and associated conditions. The following are the physical findings on this case: A heaving, diffuse cardiac impulse, a soft systolic murmur at the base and in the pulmonic area, accentuated pulmonic second, blood pressure 80—120; diminished knee-jerks; vision blurred so that he could not read; retinitis, with flame-like spots on the retina. The patient was very much emaciated. Red cell count 4,000,000; white cells, 10,000. This patient's diagnosis is therefore a severe diabetes, complicated by acidosis and retinitis.

The patient's ability to metabolize carbohydrate was measured as follows: For 48 hours he was kept on a diet of about the same composition as that he had been taking when he came in, but carefully weighed and recorded. Per 24 hours, he received:

Carbohydrate	202.7 gm
Protein	74.9 gm.
Fat	85.5 gm.

During the course of digestion, there is produced from protein, 58% of its weight of carbohydrate, and from fat, 10% of its weight in carbohydrate. This must be added to the amount of carbohydrate in his food.

Carbohydrate ingested	202.7 gm.
58% of protein ingested (74.9x0.58)	43.4 gm.
10% of fat ingested (85.5x0.10)	8.5 gm.
Total carbohydrate intake	254.6 gm.

During the second 24 hours, the patient passed 3489 cc. of urine, which contained 119.5 gm. of glucose. This, subtracted from the sugar intake, leaves 135.1 gm. of glucose which remained in the patient's body and was utilized, in 24 hours. (The decimals are used more as a matter of form, than in an attempt to be strictly accurate. In this work it is impossible to be accurate to tenths of a gram).

On the basis of this carbohydrate tolerance, the optimal diet is calculated. (Do not confuse this carbohydrate tolerance with the so-called sugar tolerance test. The latter consists in determining the curve of blood sugar content after the ingestion of a definite quantity of pure glucose. It is a useful procedure in differential diagnosis of borderline cases, but serves no purpose in a case of this sort). The points to be kept in mind when calculating a diet, are as follows:

1. Enough protein must be supplied to make up tissue waste.

2. As much carbohydrate can be allowed as the patient's tolerance permits.

3. As much fat can be given as the patient's system can oxidize.

The amount of fat that can be metabolized depends upon the amount of sugar tolerated. If fats are not completely burned in the body, acidosis ensues, as the incomplete oxidation products of fats are acids. To burn one gram of fat, between one and two grams of carbohydrate are required. The ratio varies, and its value depends upon various conditions of the patient's metabolism, some of which I shall mention later. In a case like this, in which considerable acidosis already exists, it is necessary to be on the safe side, and 2 gms of carbohydrate are allowed for each gram of fat. The 135 grams of carbohydrate which this patient can burn in 24 hours, will burn 67 grams of fat. More than this amount in his diet will result in acidosis.

Protein is required in the diet to replace tissue waste, to the extent of 1 gm. of diet protein per kilogram of body weight. As this patient weighs 123 pounds, or 56 kilograms, his daily protein requirement is 56 grams. Ingested protein yields fatty acids during its digestion, to the extent of 46% of its weight. This patient's 56 grams of protein will yield 26 gm. of fatty acids. As fatty acids constitute 90% of fat, this is equivalent to eating 26/0.9, or 29 grams of fat, which amount must be subtracted from the 67 grams oxidizable by the tolerated carbohydrate, leaving 38 grams of fat permissible in the diet.

Ingested protein likewise yields carbohydrate to the extent of 58% of its weight, which in this patient amounts to 0.58x56, or 32 gm. Ingested fat yields 10% of its weight of carbohydrate; in this case, 10% of 38, or, approximately 4 grams. This gives 32 plus 4 grams, or 36 grams to be subtracted from the carbohydrate which can be allowed the patient in his diet; 135 gm. minus 36 gm. gives 99 gm. as the amount of carbohydrate which can be allowed the patient in his diet. This is summarized as follows:

Carbohydrate metabolized	135 gm.	
This will burn ½ as much fat, or	67 gm.	
Protein requirement, 1 gm. per kilogram of body weight		56 gm. (x 4) = 224 cal.
Fatty acid from protein, 46 o/o	26 gm.	
Fat equivalent of fatty acid, 26/0.9	29 gm.	
Permissible diet fat, 67-29		38 gm. (x 9) = 342 cal.
Carbohydrate from protein, 58 o/o	32 gm.	
Carbohydrate from fat 10 o/o	4 gm.	
Permissible carbohydrate, 135-36		99 gm. (x 4) = 396 cal.
	Total	962 cal.

O'Hara (J. A. M. A., 78-1124) has devised a chart by means of which the above calculation may be avoided, and the optimal diet found on a curve, which he plots by using his known data as abscissae and ordinates. I have found it easier to use a formula, derived as follows:

$$
\begin{aligned}
G &= \text{Carbohydrate tolerance in grams} \\
G/2 &= \text{Total fat tolerance} \\
W &= \text{patient's weight in kilograms} \\
W &= \text{gm. of protein required in 24 hours} \\
0.46W &= \text{fatty acid yield of protein} \\
0.46W/0.9 &= \text{fat equivalent of protein} \\
\underline{\text{Diet fat}} &= G/2 - 0.46W/0.9 = \underline{0.5G - 0.51W} \\
0.58W &= \text{carbohydrate yield from protein} \\
0.1\ (0.5G-0.51W) &= \text{carbohydrate yield from fat} \\
\text{Diet carbohydrate} &= G - (0.58W + 0.1\ [0.5G - 0.51W]) \\
&= \underline{0.95G - 0.53W}
\end{aligned}
$$

In order to use this formula, it is necessary to know the patient's body weight, W, and his carbohydrate tolerance, G. The optimal diet is then expressed, in grams,

$$
\begin{aligned}
\text{Protein} &= W \text{ grams} \\
\text{Fat} &= 0.5G - 0.51W \text{ grams} \\
\text{Carbohydrate} &= 0.95G - 0.53W \text{ grams}
\end{aligned}
$$

For practical purposes this may be still further simplified:

$$
\begin{aligned}
\text{Protein} &= W \text{ grams} \\
\text{Fat} &= G/2—W/2 \\
\text{Carbohydrate} &= 0.95G—W/2
\end{aligned}
$$

In the case we are discussing, the optimal diet, that is the highest caloric value which the patient will tolerate, will produce 962 calories. The normal basal metabolism in 24 hours of a patient of this weight, is 1617 calories. By actual measurement, this patient's basal metabolism had gone down to about 60 o/o of that value, which is about 970 calories. A lowered basal metabolic rate is a constant finding in starvation, and is probably Nature's effort to conserve resources. Theoretically, then, this patient can tolerate enough food to keep his needs supplied, and with proper care, the prognosis should have been encouraging.

However, the prognosis depends on other factors than the mathematics of metabolism. Although the patient was warned that his condition was serious and dangerous enough to require prolonged treatment in a hospital, he left the hospital at the end of a week. Very minute directions, carefully written out, were given to him. But, neither he nor his family seemed to be able to carry them out. They were unable to collect a 24 hour specimen properly; they never brought the person who did the cooking for a conference with me; they came irregularly, instead of at the proper times; and they refused a nurse at the home to look after the diet, though their circumstances were well able to meet the expense. I felt compelled to give them an unfavorable prognosis. The patient died suddenly, in coma, about three months after I. first saw him.

The fundamental essential in the treatment of diabetes is absolutely accurate cooperation on the part of the patient. Without it, no improvement is possible, and in severe cases a fatal outcome is a certainty.

Case II is a man aged 64. Sugar was first found in his urine 17 years ago, at which time he weighed 200 pounds. Treatment up to the time I first saw him, 3 months ago, has apparently been along modern lines. The patient is an intelligent man, and knows a great deal about diabetes and its treatment, and is very faithful in following instructions. He has had severe constipation for many years; and for three successive years he had a respiratory infection which had been diagnosed as influenza. He is subject to frequent and severe respiratory infections. There are physical signs of tuberculosis in both his apices, with signs of moderate activity. There are no other pathological physical findings.

His blood contained 0.20 o/o of sugar, with definite traces of acetone and acetoacetic acid in the urine. The alveolar CO_2 was 5 o/o. On a diet whose total calculated carbohydrate was 92 grams, he eliminated 8.6 grams, giving a carbohydrate metabolism of 83.32.

This case can be considered one of fairly severe diabetes, with a mild acidosis. Joslin urges caution in the distinction between severe diabetes, and diabetes with severe acidosis. Woodyatt's definition of diabetes is the inability to utilize as much glucose as the normal individual. Diabetes consists in this deficiency of glucose utilization, and the amount of glucose the patient can utilize, is an index of the severity of the diabetes.

The optimal diet for this case, calculated as above, is:

Protein	56 gm.	224 calories
Carbohydrate	32 gm.	128 calories
Fat	26 gm.	234 calories

The total caloric value of this diet is 586 calories. The basal metabolism of a man of his height, weight, and age, for 24 hours, is 1374 calories. His measured metabolic rate was 25 o/o higher than this, due probably to the slight afternoon temperature. His outlook, based on these data, would be bad. It probably is actually not very good, but treatment has already accomplished enough improvement to give the prognosis a considerably better appearance.

In general, the objects of treatment in diabetes are:

1. To get the patient's urine sugar-free, safely.
2. To build up his tolerance (or his CH-consuming capacity).
3. To build up his physical condition.
4. To handle complications.

In any particular case, any one of these may take precedence in time and importance over the others. As a rule, rendering the urine sugar-free comes first, and is accomplished by restricting the carbohydrate of the diet. This task is not always a simple and straightforward one.

For instance, there is no object in starving a patient below his basal metabolic requirements, except possibly for very short periods. There is a certain amount of chemical activity necessary to maintain life, and the fuel for this must come from somewhere. If that minimum amount is not allowed in the diet, the body fats and proteins are called upon, the patient's tissues wasted, resistance lowered, and the fatal end hastened.

Sudden changes in diet are very dangerous. The body has a considerable latitude of adaptability to unbalanced rations, but the change to be safe must be gradual. Deaths due to sudden changes of diet in diabetes are frequently reported. The exact mechanism of the cause is not known, except in the case of too rapid reduction of carbohydrate. In that case, fats, which require a definite ratio of carbohydrates to oxidize them, are incompletely burned; the products of incomplete combustion are acids, and death results from tissue asphyxia due to acidosis. If total diet is cut down too rapidly, body fats are drawn upon; if more time is allowed, the ratio of fats to carbohydrates is susceptible of considerable adaptation.

Another danger from too rapid carbohydrate reduction, is that of death from the so called "critical hypoglycemia." When undernutrition is begun, the blood sugar sometimes drops rapidly below normal, and sudden death, without pain or coma may result.

An excessive proportion of protein in the diet is undesirable. The "specific dynamic action" of protein increases the basal metabolic rate. In diabetes it is desirable to lower the basal metabolic rate, and decrease the patient's dietary requirements. Besides, there is a considerable quantity of fat and carbohydrate built up by hydrolysis from the protein molecule.

In this case, a much more liberal diet was allowed than was indicated by the patient's tolerance; partly because of his tuberculosis, and partly because of his emaciated condition. A diet of caloric value equivalent to his calculated basal metabolic requirements, as follows, was given:

Protein	100 gm.	400 calories
Carbohydrate	40 gm.	160 calories
Fat	90 gm.	810 calories

He was put to bed, for two reasons: because of the tuberculosis, and in order to economize energy and lower his food requirements. Rest in bed assumes great importance, when you consider that it requires 20 o/o more energy to sit quietly in a chair than to lie in bed, 50 o/o more to sit in a chair and engage in conversation, and 100 o/o more to walk around; work depending on its difficulty requires up to and over a 300 o/o increase.

This patient was kept in bed most of the time for four weeks; the protein in his diet was gradually increased and the carbohydrate decreased. At the end of that time, he eliminated in 24 hours, 9.95 grams of sugar on a diet of

Protein	178.5	714.0 calories
Carbohydrate	47.7	179.6 calories
Fat	87.6	788.4 calories
		1582.0

with a total calculated carbohydrate content of 159.6 grams. This means a carbohydrate tolerance of 149.7 grams, an 80 o/o increase over the original 83.3 grams.

It is this increase in sugar tolerance upon reducing glycosuria and hyperglycemia, that is our chief anchor of hope in the treatment of diabetes. There is considerable evidence to support the idea that the Islands of Langerhans in the pancreas possess the function of secreting a hormone that metabolizes glucose, and that this is their only function. It is easy to conceive, upon the basis of the evidence that exists, that this glucose utilizing function is stimulated to activity by the presence of glucose; that when this function is deficient, relative overwork decreases it through fatigue, and that rest permits of recuperation.

This patient to date has been rendered and kept sugar free, and his blood sugar content held in the vicinity of 0.18 o/o; his acidosis has disappeared. With his tuberculosis, he is quite a problem, but not necessarily a hopeless one. His care is not a difficult matter. He tests his own urine for sugar, figures his own diets from a prescription of the number of grams of protein, carbohydrate and fat per 24 hours. I feel that he has a number of useful and comfortable years ahead of him.

Case III is a boy 12 years of age. Diabetics of this age have been until recently considered as practically hopeless. Accurate metabolic management has removed some of the terrors formerly attached to the prognosis. A family history of diabetes makes the prognosis more favorable. In this case, the history is suggestive in a brother, but not conclusive.

Another point that improves the prognosis tremendously is that the disease was discovered early. One month before sugar was first found in the urine, a routine examination of his urine had been made, and no trace of sugar discovered. Therefore, treatment was begun one month or less after the onset of the disease.

The boy's parents are very intelligent with a careful sense for following instructions. The boy himself has a good insight into his condition and its requirements, and is accustomed to discipline. These matters are very powerful factors in the prognosis.

The boy has a considerable tendency to obesity, as has every other member of his family. At the age of 11 he weighed 85 lbs. No history of severe infection since early childhood. Circumcised shortly before disease was discovered. The presenting symptoms were loss of weight, early fatigue, pains in the chest. The tonsils were somewhat enlarged and reddened, but smooth. Otherwise the physical examination was negative.

In this case, I felt it my duty to identify the reducing substance in the urine as dextrose. A specimen of urine was fermented by yeast, and the quantitative fermentation corresponded to the quantitative reduction test by Benedict's solution, in amount. The phenylhydrazine reaction produced the characteristic crystals of dextrosazone. The urine rotated polarized light to the right in a polariscope.

No acetone bodies were present. The blood sugar was 0.64 o/o, which is the highest blood sugar findings I have ever met with. I have no report on a carbohydrate tolerance test, as I was not making these tests when I first saw him.

Carbohydrate was gradually reduced in his diet, and in two weeks he was getting an almost carbohydrate free diet. It took six weeks of rigid management to free his urine of sugar; at the end of this time, his blood sugar was 0.18 o/o. The diet was continued for two weeks longer, at the end of which the blood sugar dropped to 0.14 o/o. This was felt to be low enough, and to avoid the danger of critical hypoglycemia, a little carbohydrate was allowed in his diet. The amount of carbohydrate he could handle was then gradually worked out by adding it in small quantities to his diet, until the point was reached when glycosuria and hyperglycemia appeared. About 50 grams of carbohydrate per 24 hours was found to be the upper limit.

It must be kept in mind that it is not the purpose in treatment to remove all the carbohydrate from the diet, but to allow the patient all the carbohydrate that his metabolism can take care of. It is impossible for metabolism and life to continue without glucose. When the point is reached at which no glucose reaches the tissues, the patient dies. When carbohydrate is withheld from the diet, it is derived from protein and fat. In treating diabetes, it is the aim to withhold the excessive amount of glucose which overstimulates and fatigues the glucose-burning mechanism, to supply the amount of glucose necessary to maintain life, and to control the metabolism so that its needs do not exceed the patient's glucose burning ability.

In accomplishing this, it is hardly possible to get along without blood sugar determinations as a control. It is necessary to know the blood sugar percentage first to establish the diagnosis. As we have said, diabetes is a condition in which tissues do not consume glucose; and when this is the case, glucose accumulates in the blood. This accumulation of sugar in the blood serves to distinguish diabetes mellitus from the renal form, in which the kidney is permeable to the normal concentration of sugar in the blood, and which is not a disease of metabolism, and carries with it none of the dangers and complications of diabetes mellitus. Without blood sugar control, accurate treatment is virtually impossible. If glycosuria is used as a criterion, a kidney permeability to sugar slightly higher than normal, a not uncommon finding, will cause us to push the treatment to limits which will subject the patient to inanition with its concomitant dangers of coma, acidosis, tuberculosis, decreased immunity, etc. On the other hand, it appears that prolonged glycosuria carries with it the danger of nephritis, and a nephritis decreases the permeability of the kidney. In such a case, diabetes exists without glycosuria; though no sugar is present in the urine, the glucose metabolism is defective, and all the dangers of diabetes are present, gangrene, nervous system involvement, and death from tissue starvation. The danger from critical hypoglycemia after the beginning of treatment, which has already been touched upon, can be avoided only by careful blood sugar control.

After case III had been under treatment for one year, the carbohydrate tolerance, in duplicate on two different days, was:

Diet: Protein	91.45; 58 o/o CH	52.93	87.59	50.80
Carbohydrate		290.10		227.42
Fat	184.54 10 o/o CH	18.45	148.83	14.88
Total Ingested Carbohydrate		361.48		293.10
Excreted Carbohydrate		71.30		2.64
Metabolized Carbohydrate		290.18		290.46

Even when compared with the results of the older and cruder method by which this patient's carbohydrate metabolism was originally estimated, this shows an undoubted and considerable increase over the original 50 grams per 24 hours. (The apparent close agreement of the above figures is a coincidence, for it is not possible to work to that degree of accuracy under clinical conditions.) This increase of the ability of the body to metabolize sugar under treatment, is the main object of our treatment.

This patient is at present on the following optimal diet, calculated on the basis of the above tolerance:

Protein	37 grams per 24 hrs.	148 cal.
Carbohydrate	256 grams per 24 hrs.	1024 cal.
Fat	127 grams per 24 hrs.	1143 cal.
		2315 cal.

This diet is sufficient to fulfill the needs of an active growing boy, if only reasonable precautions are taken against waste of energy. A constant watch must be kept on his weight, his tolerance, and his blood sugar; that is the price of his safety and progress. But, in spite of the fact that it is a juvenile diabetes, I can see nothing about the case that would point to a bad prognosis.

To summarize the points brought out in this paper, the following outline of indications in the diagnosis and treatment of diabetes is presented.

1. If a reducing substance is constantly present in the urine on ordinary diet, it should be first identified as dextrose.

2. By means of blood sugar estimation, determine if glycosuria is due to abnormal renal permeability, or to a fault in sugar metabolism.

3. A thorough and exhaustive examination should be made of the patient, for complications and etiological factors. All foci of infection, physical handicaps, and other conditions that might be a drain on the patient's physical resources, must be cared for.

4. By means of measurement of carbohydrate intake and excretion, determine how much carbohydrate is being utilized.

5. On the basis of the patient's weight and carbohydrate tolerance, calculate the optimal diet.

6. It is usually advisable to determine the basal metabolic rate, to aid prognosis and check the adequacy of the optimal diet.

7. If the metabolic requirements are above the food tolerance steps must be taken to lower the metabolism; rest, low protein diet, and undernutrition.

8. Render the patient's urine sugar free by gradually and progressively restricting the diet carbohydrate.

9. When sugar disappears from the urine, control the treatment by means of the blood sugar percentage. This should be kept as near the normal figure as is consistent with the patient's metabolic needs. Watch for critical hypoglycemia.

10. Build up the patient's tolerance by resting the sugar-catabolizing function. As the tolerance increases, a more liberal diet can be allowed, but allow a sufficiently wide margin of safety.

CATHETERIZATION OF THE DUODENUM.

Clarence Emerson, Ph. D.. M. D., F. A. C. S., Lincoln, Neb.

Although trans-gastric catheterization of the duodenum for diagnostic or therapeutic purposes was successfully done by Hemmeter and Kuhns as early as 1896, the tubes they used were so bulky and complicated that they were utilized but little. Contemporaneously in 1910, Einhorn and Gross each constructed a small flexible metal tipped rubber tube which has been widely used with success in efforts to gain entrance to the duodenum. This ability to pass a tube via the stomach into the duodenum with comparative ease together with greater interest in chemical analyses of digestive juices inspired by Einhorn's work on fractional gastric analysis furnished the impulse that has resulted in much fruitful research in the realm of duodenal diagnosis and therapy.

As a result of this enthusiasm there is a maze of literature both good and bad, and no doubt the possibilities for precise diagnosis and effective therapy have been greatly overrated, yet from the chaff of exaggerations there may be separable grains of truth, the value of which should be recognized.

The duodenal tube up to this time has been used for many purposes.

(1) As a means of diagnosis duodenal contents have been collected to determine the presence of and character of the bile. To learn the composition of duodenal contents as to the digestive ferments. To obtain cultures of typhoid bacilli. To determine the degree of hemolysis and the presence of blood. There has been injected into the duodenum substances opaque to the X ray to obtain radiographic evidence of abnormal shape, size and position of the duodenum and this evidence has been found of value in diagnosis of ulcer, diverticula, dilated duodenum, stricture and prolapse. The distortion of the duodenum from pressure of contiguous diseased viscera has furnished evidence of pathology in these surrounding viscera.

(2) For purposes of therapy the tube has been the means of direct application of medicinal agents, and it has served to draw off toxic duodenal contents in cases of ileus. Infusions of normal salt solution, glucose solution and other solutions have been injected by the drip method as postoperative therapy and alimentation by the duodenal tube has been used by Einhorn, Gross, Lazarus, Morgan, Jones and others in a variety of diseases, some of which are persistent vomiting of pregnancy, nervousness, stenosis and pylorospasm of infants, stomach disease due to ulcer, atony, chronic dilation and ptosis and in cachectic conditions due to pernicious anaemia, tuberculosis and chronic fever. Einhorn claimed that its use in cirrhosis of the liver reduced the functional work of the liver and others have claimed it was beneficial in diabetes. Considerable enthusiasm was aroused by the contention that, through the introduction of epsom salts into the duodenum by the duodenal tube a nerve reflex mechanism stimulated the bile ducts and then the gallbladder to empty, thus permitting separate collection of bile from these structures and effecting practically a lavage of the gallbladder. Perhaps it is well to state that probably the most valuable object attained has been the furnishing of a means of physiological research of the duodenal contents.

A so called duodenal dyspepsia has become a disease entity in the opinion of some extreme enthusiasts and specific treatment by lavage and direct application of medicaments to the duodenal mucosa is prescribed for it.

With all of these uses of the duodenal tube in this age of specialistic tendencies the failure of a large crop of duodenal specialists to materialize is the outstanding wonder. Nevertheless, we have at least a few falsely scientific internists in our midst who have reduced to quackery the utilization of the duodenal tube and have prostituted scientific medicine by a false pose of ultra-scientific pretention by means of which their clientele have become enthusiastic swallowers of the little rubber tube at so much per swallow.

I want to reflect no discredit on the numerous men such as most of the experimenters in this comparatively new field of investigation represent. On the contrary, a great amount of valuable work has been done and is being done, and no doubt more valuable knowledge than has already been obtained will eventuate from the continuance of the work. I merely wish to point out that we have not yet reached the stage where duodenal clinics are a public necessity.

TECHNIC OF INTRODUCTION OF THE DUODENAL TUBE.

Before Einhorn and Gross separately used a small calibre tube and found it able to pass the pylorus, the duodenal bucket had been used for certain limited purposes. The tube now most frequently used, is one of about four mm. outside diameter with an oval shaped smooth metal tip with its widest diameter about one cm. in width. Four slits each two mm. wide traverse almost its entire length and furnish ingress and egress to the interior.

Recently Pelefski has recommended a smaller heavier tip. In the introduction of this tube greater difficulty is experienced to cause it to pass over the glottis and enter the esophagus, than is the case with the stomach tube. This is due to the weight of the tip and flexibility of the tube permitting a marked curve which tends to drop it into the larynx. Its passage into the esophagus must be brought about by the swallowing motion or by introducing it threaded through a stomach tube, the latter being removed after it has carried the duodenal tube well into the esophagus. Even greater difficulty may be encountered in passage of the tube through the pylorus if the latter is normal or slightly obstructed. I think there is no test reliable to determine that the tube has actually passed the pylorus, other than fluoroscopic or radiographic evidence, although it has been claimed that the character of the aspirated material will decide the point. The possibility of regurgitated duodenal contents into the stomach or of passage of gastric contents about a dilated pylorus precludes certainty by this method. Some have found the tube in the duodenum after a wait of from one-half to two hours, and in others its retention over night is necessary. This delay is so frequent and prolonged as to prevent any routine clinical application in the office, and where fluoroscopic and radiographic evidence is not at hand, no reliance can be placed on the work. Entrance to the duodenum is favored by lying on the right side, with the head lowered and by the injection of salts or milk to promote gastric peristalsis. Pressure over the abdomen guided by the fluoroscope may accomplish the desired result. I had one patient in whom the pylorus was relaxed and the duodenal tube passed into the duodenum almost immediately after reaching the stomach, and several others in whom repeated efforts with the tube in the stomach several hours failed.

The normal duodenal contents in the fasting state consist of a clear yellowish viscid liquid usually a few cc. to 50 cc. being aspiratable. After the introduction of various solutions, salts, food, etc., the aspiratable content contains bile and the pancreatic ferments amylopsin, steapsin and trypsin are present. The effect of food on the flow of bile was well illustrated by an experiment by Tenny and Patterson on a patient with closed common bile duct, and a fistulous tract leading to the hepatic duct. A tight fitting catheter was placed in the fistula and the bile collected for a twenty-four hour period under the influence of various stimuli. The collection was started at 11:35 A.M. During the first hour the bile was allowed to flow, and 64 cc. was collected. The second hour, in a psychic test with a ham sandwich, which the patient was allowed to smell and taste, the flow was diminished to 50 cc. At the beginning of the third hour a generous mixed meal was given, and during the first two and one-half hours following this, 128 cc. was collected. Later another meal was given, with practically the same cycle as to the rate of flow.

A second test with the duodenal tube was then given the patient, and after it had been determined that the tube was in the duodenum, 75 cc. of a 33% solution of magnesium sulphate was injected. During the next four consecutive periods of fifteen minutes each, 15 cc. was secreted, making 60 cc. during the hour after the magnesium sulphate was injected. There was no increase in the rate of flow, or change in color or in the consistency of the bile from the tracheotomy tube, after the injection of the magnesium sulphate. The estimation of the total quantity of bile secreted during the twenty-four hours was 1200 cc.

This case report furnishes valuable data regarding the physiology of the flow of bile and suggests that with each spurt of food from the stomach a flow of bile is stimulated that intimately mixes in the duodenum with the food; that the flow of bile is not continuous and uniform, but intermittent under the influence of admission of small quantities of food to the duodenum.

In 1917, Meltzer, in connection with a study of the physiology of the neuromuscular reflexes of the alimentary tract, observed that when solutions of magnesium sulphate were applied directly to the duodenal mucosa, there was an apparent relaxation of the sphincter at the papilla of Vater. Within a short time there was a contraction of the muscle bundles in the gallbladder wall, followed by a discharge of bile into the duodenum. This phenomenon was in keeping with the law of contrary innervation.

Lyon used the method described by Meltzer as a means of diagnosis in diseases of the gallbladder, making a study of the amount, color, character, cytology and bacteriology of the bile expressed, and emphasized also the therapeutic value of the procedure. His five reasons for accepting the method were that (1) the law of contrary innervation was correctly applicable to the biliary apparatus; (2) the color and viscosity of the bile obtained in the second aspiration (so-called "B" bile) strongly suggested that it came from its storage chamber within the gallbladder; (3) the "B" bile from diseased gallbladders is sometimes thick and tarry, containing mucopurulent flakes, pus cells and bacteria; (4) in cholecystectomized animals, "B" bile is not obtained by any of the aspirations; (5) in patients with gallbladder disease treated by this method, a marked improvement had been noted.

Recently Bassler, Luckett and Lutz have studied the Lyon-Meltzer method, particularly in order to test the claims advanced by Lyon. Introducing magnesium sulphate with a tube into the duodenum under direct observation, in patients undergoing operations on the biliary apparatus, there was no indication that the sulphate solution caused any sphincteric relaxation, gallbladder contraction, or even partial emptying of the gallbladder. They also found that the specific gravity of the bile was so elevated by the magnesium sulphate solution that any estimations as to its viscosity are of no value; the color change to the "B" bile was so irregular and ill defined that it could not be concluded that the "B" bile comes from the gallbladder. Furthermore, as is well known in cases of biliary infection, bacteria and inflammatory cells are commonly encountered in bile from all parts of the tract. The assertion by Lyon that cholecystectomized animals do not have the darker, more viscous "B" bile was contradicted by the results of special new experiments on animals. The specific action of the papilla of Vater and the gallbladder claimed for solutions of magnesium sulphate is denied because solutions of various inorganic salts, (sodium sulphate, sodium phosphate, magnesium citrate), five per cent peptone, 0.5 per cent hydrochloric acid, and food, all may stimulate a flow of bile when introduced into the duodenum; in fact, 0.5 per cent hydrochloric acid caused a greater flow of bile than magnesium sulphate or the other solutions. They suggest that the deeper color of the "B" bile is due to oxidation and not to concentration in the gallbladder. Bassler and his co-workers also mentioned some recent experiments on dogs in which methylene blue was injected into the gallbladder during digestion, which stimulates a flow of bile into the duodenum. There was no flow from the gallbladder, the bile evidently coming directly from the liver.

Dunn and Connell report observations on a patient who had a hepatoduodenostomy, and in whom, the gallbladder and common bile duct being absent, a catheter was so placed that it led through a fistula into the duodenal recess into which the liver poured its secretions. Now, by introducing magnesium sulphate solution directly into the duodenum through the catheter, they obtained the typical "B" bile in the usual sequence. They conclude from this experiment that it is not necessarily true that the "B" bile represents gallbladder bile, or that it is possible to localize disease of the biliary tract on the evidence afforded by the Lyon-Meltzer method of bile segregation.

The following conclusions appear justified: From a diagnostic standpoint the value of the collection of duodenal content is probably limited. The presence of blood is significant of ulcer and absence of bile or pancreatic enzymes indicate obstruction to the biliary or pancreatic ducts. The injection of a radiographic fluid through the tube furnishes evidence as to its size, position and deformity due to intrinsic disease or external pressure, and it appears that this measure is the most valuable of the diagnostic procedures made possible by the duodenal tube.

The use of the tube for alimentation may be found of value in the nonsurgical group of diseases enumerated earlier in this article and possibly it might serve a useful purpose in certain cases of postoperative ileus for combined drainage and alimentation as a substitute for jejunostomy. It has been suggested and tried to some extent as a means of transferring bile from a healthy patient to one whose bile duct is obstructed or to transfer bile from a fistulous tract of the same patient to the duodenum.

The use of the tube in chronic cholecystitis or choledochitis under the impression that magnesium sulphate specifically stimulates emptying of the gallbladder appears to be irrational since the work of Bassler, Luckett, Lutz, Dunn and Connell raises a doubt as to its action, and furthermore, even if magnesium salts on the duodenal mucosa set up a reflex resulting in emptying of the gallbladder, that result can be as well gained by administration of salts by mouth as by injection through a duodenal tube.

The Council Bluffs medical clinic has been incorporated with Dr. Donald Macrae at the head. Others in the organization are Drs. V. L. Treynor, M. A. Tinley, Mary Tinley, M. E. O'Keefe, A. A. Johnson, W. E. Ash, C. S. Erickson, and C. A. Hill. The erection of a $100,000 structure is planned for the clinic.

FULGURATION IN THE TREATMENT OF AFFECTIONS OF THE LOWER GENITO-URINARY TRACT.*

Arbor D. Munger, B. Sc., M. D., Lincoln, Neb.

In 1910 Beer of New York introduced into the realm of Urology the method of destroying bladder tumors by use of the high frequency current through the natural passages. During the last decade a notable advance has been made in the use of this current until at the present time it heralds a wide range of usefulness in its applicability to affections of the lower genitourinary tract.

The apparatus commonly employed is one capable of developing both the unipolar and the bipolar currents. The unipolar current or the current of Ouidin is commonly known as fulguration. This is the original current used by Beer and who I believe uses it exclusively to the present day. It is the safest current to use because of its limited power of penetrability although because of this it prolongs attainment of the desired results. The bipolar or D'Arsonval current because of its intense electrocoagulating power insures quick destruction of neoplastic tissue but it is not entirely devoid of danger to the patient. This current necessitates the use of two entirely different electrodes: One of these an indifferent electrode, a metallic plate as large as possible, in order to obviate any sensation of heat; the other, the active electrode, a heavily insulated piece of copper wire about 20 cm in length. The type of lesion determines for me which current is to be used and the desired action is obtained either by placing the unipolar electrode at a desired distance from the tissue forming a spark gap or embedding the active pole of the bipolar current into the tissue itself and the other indifferent pole in the desired region on the patient. Contrary to certain foreign urologists who advocate for intravesical work the direct vision cystocope with an air distending medium, the use of the ordinary Buerger operating cystoscope with a distending medium of sterile water gives results amply as good and certainly the operative procedure is far more comfortable to the patient. For work in the deep urethra it is essential to use an irrigating instrument without a beak but having accessory channel for the introduction of the electrode or operating instruments.

It is thus we have at our command in this therapeutic measure a destructive agent of definitely desired power i. e., carbonization by spark production; deep action by electrocoagulation; and with it the living pathology of the whole lower genitourinary tract may be accurately attacked under direct visual control.

It would be the natural assumption that there must be some factors which would tend to detract from the definitive in this work. There are several of these factors, chief among which are (1) pain, (2) hemorrhage, (3) infection, (4) retention of urine, and (5) perforation.

Pain—In working on tumors of the bladder, pain is a fairly constant negative factor just so long as the active electrode is kept in contact with the neoplastic tissue, or to put it conversely just so long as normal tissue does not become the object of attack. I believe it to be a good sound axiom of this work to present here, that when working upon large tumors, when pain is complained of by the patient, this is the proper time to stop the application in that given area, for that sitting. The obvious reason for this is self-evident.

In attacking the smaller tumors the unipolar current is used and it is expected that the patient will have pain of a few seconds duration intermittently but about which one need not be concerned because of the superficial action of the current used.

Hemorrhage—Primary hemmorhage after electrocoagulation rarely occurs. Conversely in a given case where there is bleeding from a tumor-site and coagulation is effected, the bleeding ceases. There does occur, however, an occasional secondary hemorrhage some eight or ten days after the treatment due to the sloughing of the necrotic mass. This should always be anticipated and the patient warned that it might occur. It is usually not serious enough to give cause for worry and the patient being forewarned is not alarmed.

Infection—Owing to the very nature of these types of affections in the lower genitourinary tract coexistent infection is presupposed. There is usually a concomitant pyuria which cultures the colon bacillus. I am of the opinion that the urologist has been too prone to disregard this factor in the patient before and after treatment in his zealous determination to get rid of the tumor as soon as possible. Not infrequently one observes apparent septic reactions following in a few days after electrocoagulation in an obviously infected bladder. The pyuria increases and there are severe cystitic manifestations. The introduction of acriflavine by Davis has proved a happy adjunct in the preoperative preparation of these patients.

---

*Read before the Lancaster Medical Society, January 6th, 1923.

Retention of Urine—Not infrequently electrocoagulation will exert a powerful action upon the urethral sphincter. This may last for a number of hours and resist attempts at catheterization with a soft catheter. This should be anticipated and if necessary permanent catheter drainage instituted with a stiff catheter for a period of twenty-four hours.

Perforation—Perforation of the bladder wall is an accident which may occur. But with the advent of our increased knowledge as to the action of the current on the tissue in question this accident has become rather remote. I cannot agree with certain of the foreign writers who contend that such cases as have occurred were due to the American method of attack through the prism cystoscope, but rather to our method of application of the current. In the beginning we were prone to attack the base; now we work differently, the attack is made from periphery to base and we stop when the patient tells us that normal tissue is being approached.

In the discussion of the various affections of the lower genitourinary tract which lend themselves to destruction by the high frequency current there is no better example for primary consideration than the benign vesical papillomata. Not only has the high frequency treatment surpassed all other form of treatment for papillary tumors of the bladder, but it has served as an incentive for closer observation of the patients who have been cured of their tumors. There is no question but that there is an evident increasing tendency to discard operative surgery in these affections and substitute electrocoagulation in its place. Excision or resection should not be practiced except where intravesical treatment is impossible or difficult.

It is a clinical statement that open operations are followed by recurrences in more than 50% of the cases. If by recurrence is meant the reincidence of the tumor at the site in which the former tumor was found then this statement is open to question. Rather these patients present new tumors in parts remote from the original site. It is a natural tendency for papilliomota to implant new seeds in new fields when physically handled. This spread does occur under diathermy but on the other hand these so called recurrences are particularly amenable to treatment because the patient is under observation, while the tumor is still small, and one or two applications usually suffice for complete destruction. In this form of treatment the patient may be cared for in an ambulatory sort of way, the patient is not obliged to take an anesthetic nor spend the long convalescence that is part of the suprapubic operation. While the low mortality rate of suprapubic operations for papillary tumors is recognized yet by the employment of fulguration the mortality risk is entirely eliminated in the hands of those who are competent to carry it out.

A clinical cure is based upon freedom from symptoms, a clear urine, microscopically free from pus and blood, and the absence of any evidence of tumor by cystoscopic examination three months after the last treatment. Every patient is impressed with the possibility and danger of recurrences and advised to return at intervals of six months for cystoscopic examination.

If the destructive effect of the high frequency current is so decisively accurate in the treatment of the benign vesical tumors, this action seems to be reduced to a negative phase in the malignant tumors of the bladder. One would assuredly not attack that process which is definitely known to be malignant with intent to effect a cure. On the other hand the high frequency current may aid as a differential diagnostic measure in those borderline cases of apparently degenerating tumors. Benign tumors respond very rapidly to this form of treatment. Malignant tumors do not.

Stimulation of interest as to the adaptability of this form of treatment to cases of chronic infection of the lower genitourinary tract, during the last few years has opened the way for the urologist to a successful handling of a heretofore baffling and intractible condition. A more thorough study of these cases through the cysto-urethroscope has revealed various inflammatory proliferations which by chronic irritation keep a constantly recurring infection going, especially in the prostate and seminal vesicles. Player and Mathe' (Jour. Urology 5, 3, 1921) have presented an interesting study of the dominating symptoms in sixty-eight of these cases. It is worthy of note that over fifty of these cases complained of one of four symptoms i. e. pain and discomfort in the perineum, constant or repeated morning drop, dull lumbo-sacral backache, pain or sensation of itching at or inside the meatus. The remaining symptoms range from inguinal and hypogastric pain, increased frequency of urination and tenesmus, dimunition of sexual power, pain in the testes, premature and painful ejaculation, sensation of mass lying in the urethra and terminal hematuria to ball valve interference of the urinary stream.

Many of these patients are below par physically, presenting lesions in the gastrointestinal tract, tuberculosis, joint and muscle pains, lesions in the endocardium, or manifest a peculiar susceptability to intercurrent infections true to the picture of a chronic focal infection.

Morphologically these excresences which occur as a result of chronic deep urethral infection present a definite picture and are recognized as (1) a sessile polypoid mass or a true polypus with a pedunculated base. There should be no trouble in recognizing the true polypus although great confusion exists in the literature at the present time, even to the confusion of papillomata with these tumors. Papillomata are common in the bladder but very uncommon in the deep urethra. Papillomata are primary new growths while the tumors of the deep urethra are inflammatory lesions. The beginning of these future polypoids appear as small islands of graulation tissue. They present a characteristic inflammatory zone which fades off into the healthy mucosa and frequently from their surface are floating little fimbria of muco-pus and often at the apex of the granulomata are seen miliary pearls. As the inflammatory process advances, the simple proliferation develops through the stage of polypoid mass, later to become a true polypus with a pedunculated base. Very frequently all stages of this production can be seen in the same individuals. (2) Simple inflammatory excresences well rounded, sometimes cyst-like in appearance and not infrequently having a small sinus at their summit running into the substance of the prostate. These are most common in the postmontane space to the vesical orifice, on the floor of the posterior urethra. These are probably infected glands or ducts described by Griffiths. These ducts differ from the prostatic ducts in that they are smaller, have fewer branches, and lack a muscular coat. One can easily picture how these little ducts once infected may increase in size, project and encroach upon the lumen of the prostatic urethra or vesical neck. How these ducts once infected may become sealed over and become a site of focal infection, which, in turn contributes locally to definite prostatic changes, chronic seminal vesiculitis, and systemic symptoms of absorption from a pent up focus. These can be destroyed by light cauterization with the fulgurating electrode or direct implantation into the lumen of the duct of silver nitrate through a small ureteral catheter.

The proper treatment of these chronic infections of the deep urethra resolves itself into direct attack through the air or water dilating cysto-urethroscope with light fulguration, prostatic and vesical massage with the added expedient in certain cases of seminal vesical instillation of a proper antiseptic medium by vasostomy. The results are excellent.

One may readily see from this symptomatic and pathologic review that we shall henceforth be able to help a large number of functional disturbances and neuroses which have appeared virtually incurable in the past.

Of further definitely proven value fulguration has found a place in the relief of certain cases of difficult urination or urinary retention due to encroachment upon the bladder neck by the so-called hypertrophied prostate, or middle lobe enlargement of the prostate. This is accomplished by tunnelling the offending obstruction with the active diathermic electrode. H. McClure Young has recently added a refinement to this technique (Jour. Urol. V 11 3, 1921) by using the fulgurating needle in conjunction with Young's punch. In this manner the operator may isolate the tissues he wishes to destroy thus obviating the danger of damage to adjacent structures.

SUMMARY

1. The high frequency current is a definite tissue-destroying agent of desired power, acting through carbonization or electrocoagulation.

2. The destruction of benign bladder tumors is definite and devoid of danger.

3. Granulomata, polypoid masses and polyps of the deep urethra and the bladder-neck with the concomitant infections of adjacent structures are readily destroyed by fulguration. Upon the alleviation of this pathology certain definitely recognized, heretofore intractible symptom complexes are relieved.

4. Certain cases of urinary obstruction due to so called middle lobe hypertrophy of the prostate may be relieved by tunnelling the obstruction with electrocoagulation.

MODERN MEASURES.*

Czar C. Johnson, M. D., Lincoln, Nebraska.

Modern therapeutic and diagnostic measures include the sum total of clinical and scientific knowledge, of fundamentals, particularly physiology, chemistry, biology, physics, pathology and human nature.

Clinical information may be applied quite successfully with little scientific knowledge, but scientific knowledge cannot be applied without clinical training.

Until this correlation is recognized the fullest measure of success will not be universally possessed by the medical profession.

The rational method of reducing cancer mortality is the elimination of procancerous pathology as based upon clinical experience. Procancerous lesions that offer remedial measures are those of the skin, breast, rectum, and cervix. They are minor affairs in the start. The safest and surest method of removing them is surgery, which can be done without pain, trauma, shock or gross mutilation, and usually under local anaesthesia. The assurance that ether narcosis and major surgical procedures are necessary, will eliminate the greatest obstacle to securing cooperation and results. Activity in this field will justly advance the interests of the medical profession and benefit humanity.

Infective and mechanical ileus continues to take toll. Modern surgical knowledge and training should eliminate postoperative intestinal obstruction, but too often it occurs. A certain number of unavoidable cases of ileus will occur in every physician's practice and must be treated. Scientific data and clinical experience has demonstrated that time is the big element when dealing with this proteose toxemia. Some will respond to medical measures alone, the majority require surgery. Ether narcosis will intensify the toxemia and hasten complete intestinal paralysis. In a well established process our task is to save life. An enterostomy is mandatory. I prefer a high McKinnon jejunostomy. While it requires more skill it has a larger range of usefulness. It drains an area that does not tolerate toxic material. It is obviously above the obstruction. It puts the gastric region at rest, and serves as a means for the introduction of neutralizing fluids, stimulation and nutrition. If the abdominal cavity contains free fluid, pelvic drainage should be added. These surgical measures may be applied anywhere in a few minutes, with local anaesthesia and a few instruments. It does not imply a finished surgical education. In a case of ileus I would rather have an enterostomy done by the family physician the first hour, than treatment by the greatest surgeon living in the eleventh hour. The same technique can be applied for perforation of a hollow viscus, with, of course, closure of the perforation.

A percentage of chronic gastric ulcers become malignant. All chronic and duodenal ulcers warrant surgical treatment. I believe the proper procedure is an excision of the duodenal ulcer, with a pyloroplasty if required, and a pylorectomy, partial gastrectomy or subtotal gastrectomy for gastric ulcer, supplemented by a McKinnon complemental jejunostomy. This insures the maximum benefit. It removes the pathology and eliminates a secondary malignancy. It maintains the normal relationship and arrangement of the organs involved. The jejunostomy provides rest for the operated organs, prevents suture tension and serves as an avenue for the introduction of fluids, nutrition and medication. Many patients may be operated upon with local or spinal anaesthesia. Just a word regarding spinal anaesthesia. It is contraindicated in shock, low vitality, the psychopathic and very nervous patients or those who have inelastic arteries. Where there is a history of chronic headache, or syphilis, I advise not to use it, as such patients are very apt to later complain that it aggravated their condition. The strictest technique, in preparing the field, the solution and its introduction, together with manipulating the patient afterwards, must be observed. Physiology and clinical experience teach us that referred nervous stimulation accounts for a large number of functional disturbances of organs. The ileo cecal region is a frequent origin of referred gastric and intestinal disturbance. Surgical treatment of acute and chronic appendicitis, with or without mechanical factors added, becomes a minor operation by the use of local anaesthesia. With it the removal of the pathology in this area may be accomplished, for hundreds of patients who would otherwise bear their affliction rather than submit to a general anaesthetic. The number of women with lacerated perineums, (many with fecal incontinence) procidentia uteri, and lacerated, ulcerated or diseased cervix, is a severe indictment of our fraternity. These conditions are easily corrected under local anaesthesia surgery, and every physician should use tactful influence to secure it.

---

*Read before the Tenth Councilor District and Republican Valley Medical Society, Cambridge, Neb., May 25th, 1922.

A hernia or hydrocele constitutes a big handicap to any individual. The fear of ether narcosis prevents many with these infirmities from accepting surgery. With local anaesthetic surgery they resolve themselves into simple operations. Hemorrhoids and anal fissures are no respecter of persons. The fear of a general anaesthetic, knives and hot irons furnishes the advertising creature lucrative patients. Ninety-eight per cent can be treated and cured in the home or office by using local anaesthesia, a needle, suture, and a pair of scissors. "A rose by another name smells just as sweet." ' Call your work treatment as it is in fact, and you will be well rewarded, in the end results. In all head injuries, whether acute or chronic, the dangerous element and the one that produces disability or death, is increased intracranial pressure. If this fact is once fixed in physician's minds, they will not allow one who has had an acute head injury to die, without an attempt to aid. They will not fill all epileptics with bromides. Brain tumors and abscess will not be bombarded by mercury and the iodides on general principles. Infants will not be given anodynes to control spasms due to cortical irritation, and paralysis produced by cerebral hemorrhage or skull injury at birth will not be treated by "watchful waiting" and allowed to drift into the hands of an osteopath or a chiropractor. The spinal mercurial manometer is a modern instrument of precision with which to determine the intracranial pressure. It is a valuable guide to therapeutic measures.

An endless number of other common conditions might be added to this list, but the above illustrates my objective.

Medical practice is a product of evolution. It was originally an art. Later, clinical knowledge was incorporated and with these it continued for many years. In the course of progress science made its appearance, and has almost completely exterminated art. In late years it has been the fashion to solve all problems by legislation. Legislation has doubtless been of some benefit to the medical doctor, but you cannot make a doctor by statute. The fact that the law prescribes a course of study, sets up an arbitrary examination, which must be passed to secure recognition, called a license, does not make a doctor. We all know that the same relative measures fail to make lawyers, plumbers and mechanics. Every law that has had for its purpose the raising of the standard of the medical profession, has been either accompanied by or soon followed by laws legalizing and endowing with all the prerogatives desired, some organization, whose qualifications were far below those deemed unfit by the medical profession. This is not surprising. Medical legislation is in fact special or class legislation. Effective legislation is the registration of a public consciousness. Most medical legislation has been promulgated by a small minority, preceding the demand of the majority. In some instances failure to differentiate between the sphere of morals and the sphere of medical economics has occurred, with the enactment of medicocratic rules. Experience has taught that the creation of a demand by legislation is a difficult, undertaking. The reverse order while requiring time and the suppression of keen desires on the part of the promoters is more easily assimilated and more effective. Our profession is worth the fight. We should not be too proud to do it. The most effective armament is modern scientific and clinical knowledge, with a large measure of old fashioned art. It is a process of educating the public, which takes time, tact, patience and outstanding results. The correlation of science, clinical experience and art, if used judiciously and persistently will result in real service, which will be recognized and will merit the confidence necessary to gain and keep adherents. These forces should be supported by an esprit de corps, a devotion to duty rather than gossip, slander and petty jealousy; application of the knowledge we have to its fullest capacity instead of chasing theoretical rainbows and by keeping ourselves on a high moral plane not forgetting that our profession has relational responsibilities to the public. I believe if we will apply these forces, individualism in medicine will survive. If we do not, state social medicine in some form will prevail.

MODERN SCOPE OF ORTHOPEDIC SURGERY.*

James E. M. Thomson, M. D., Lincoln, Neb.

Modern orthopedic surgery may be defined as, "that branch of surgery treating of injuries and diseases of the extremities and back". Its broad and expanding scope embraces reconstructive surgery and a large share of industrial surgery.

Closely allied with these terms are, vocational reeducation, functional reeducation, occupational therapy, and rehabilitation of the disabled as well as the more simple civil terms, human conservation and reclamation of the disabled.

By physical reconstruction is meant surgical treatment continued until the greatest possible restoration of the disabled part has been secured.

Functional reeducation comprises the methods employed to restore function to the disabled part so that it may accomplish the same work for which it had been used prior to the accident or injury, or to teach it new functions. And in the case of amputated members, to teach the use of artificial appliances. This in reality is combined with the surgical treatment in restoring physical repair, as well as those measures which aid the patient in overcoming his physical handicap.

Rehabilitation likewise, embodies the idea of enabling a disabled individual to obtain an economic position in society. And with this heading are linked occupational therapy and vocational reeducation, which, by training the muscles and members of the body during the period of convalescence, give the patient an opportunity to learn new lines of work, new trades, new businesses and new activities.

Orthopedic surgery has been practiced for a hundred years under cramped dimensions. The recent war has given this branch of surgery its rightful and comprehensive place in medicine. The United States and British Governments classified orthopedic surgical conditions as: "(a) Derangements and disabilities of joints, including ankylosis. (b) Deformities and disabilities of feet, such as hallux valgus, hallux rigidus, hammertoes, metatarsalgia, painful heels, flat or claw feet. (c) Malunited or ununited fractures. (d) Injuries to ligaments, muscles, and tendons. (e) Cases requiring tendon transplantation or other treatment for irreparable damage to nerves. (f) Nerve injuries complicated with fractures or stiffness of joints. (g) Cases requiring surgical appliances, including artificial limbs."

By the segregation of orthopedic patients during the war and by the modern orthopedic treatment in military work performed by experts trained in this specific line, it was possible to send a great number of the injured back to the front lines, and if not there, to special duty whereby they continued their service.

According to Goldthwait, "Of 1350 cases discharged from the Orthopedic Center at Shepherd Bush Hospital in a given period, sent back into civilian life better, and industrially trained, so although crippled, they were still able to use themselves in the community."

---

*Read before a meeting of the Nebraska University Premedical Students, Lincoln, Neb., 1922.

Profiting by the experience of our allies, the medical department of our army caught the reconstructive idea early. There were in the A. E. F. centers for orthopedic patients, hospitals in which a portion of the beds were held strictly for orthopedic conditions. Schools for physicians desiring to take up orthopedic work were established. And those who through long training and experience, which made them especially adapted as consultants, were placed over these areas to advise and carry out these orthopedic measures for the best physical results. Men and women trained in physiotherapy and its allied sciences, served as orthopedic aides.

The American Red Cross, the Federal Board of Vocational Education, the Public Health Service and the War Risk Insurance Department took the further rehabilitation and the furtherance of continued treatment to those disabled who were discharged from the various government hospitals. Large numbers of these soldiers have availed themselves of these opportunities. Every day from one to twelve such men are examined in our office, and are advised and given treatment, and many are enabled more efficiently to take up various lines of vocational training, thus fitting them as productive citizens of the community, in which they live.

This idea of salvaging these cripples from the "scrap heap" of human existence, has fully awakened the entire country. The great industrial institutions have entered into the problem of reclaiming their victims, conserving their forces and returning them to a useful existence once more.

It is exceedingly difficult to make both laymen and physicians understand and get the idea that physical reconstruction and rehabilitation are not entirely new departures in the treatment of the injured. Relatively they really mean the making of those disabled by accident and disease, if not able to do their previous work, do work for which they may be physically adapted.

It is my belief that this specialty offers a great opportunity to the young man entering a medical career.

As I have mentioned before, the large industries are not only employing physicians trained in this line of work but they are training men to a reconstructive viewpoint.

Likewise through educational propaganda, legislation has been adopted in many states by which not only financial aid and competent medical care is given injured employees, but also rehabilitative education, which will place these patients again on an earning and self supporting basis.

Consistent with this the industrial employers of labor have opened curative work shops. They are examining the employees and classifying them for the kind of work for which they are physically fitted. In the case of those suffering a disability, they are placed in lines of work for which they are trained and adapted. Thus in their new work their disability is not a handicap.

The insurance companies protecting and furnishing the employees with compensation insurance are now realizing and appreciating the orthopedic viewpoint and the reconstructive methods of treating disabilities.

Again, the increase in number of those who are disabled purely by occupational accidents and diseases is so great, not counting those injured on our streets, highways, and railroads, and the possibilities for reconstructive treatment so great that their proper care is beyond the present number of physicians interested in this line of work.

There are according to one series of statistics of the Department of Labor, thirty million employed in the industries, of which three million were disabled by accident and disease that year, 800,000 of which should receive physical reconstruction. 200,000 should be vocationally retrained and otherwise reclaimed. Of these eight hundred thousand, and some non-fatal accidents, 74,600 would result in an amputation and the loss of some member, and are distributed as follows: The loss of one eye, 5,700. The loss of a hand or arm, 2,880. The loss of a foot or leg, 1,220. The loss of a finger or part of a finger, 52,150. The loss of two or more fingers, 9,100. And all other specific injuries, 3,580. Giving a total of some 74,600.

It must be considered that these industrial injuries are but a percentage of all the numerous accidents that occur. To these patients the same considerations must be emabout 1000 were sent back into the army as class A, B, and C men. Of this number 294 were class A men. The remaining 350 were ployed in the treatment that we employ in industrial rehabilitation. There are statistics being gathered by almost every state regarding the accidents and the relative loss to the commonwealth. In our own state during the year 1920, 13,676 accidents were reported to the department of labor. Of this number 9,729 received compensation at a cost of $402,780.92 for compensation alone.

Now we step to another phase of the reconstructive field, that is the care of children crippled by disease, accident or congenital deformity. It behooves everyone in medicine to recognize these conditions early. This early recognition has a special bearing upon the ultimate result to be obtained. It is surprising when you realize that numberless children are neglected until their deformity becomes a permanent disability, and that if such a deformity had been taken earlier in the course of its progress, it could have been prevented. The ravages of infantile paralysis, tuberculosis, rickets, scurvy, syphilis, and the like, represent a great share of the deformity producing diseases with which the orthopedic surgeon deals. And, if the seriousness is realized from the start, and the best palliative methods are adopted, usually the child can be saved from disability of any kind. Congenital dislocations of the hip, bowlegs, knock-knees, crippled feet and various other deformities of the feet are, if taken early, absolutely curable.

This State, as well as other states, has provided for these children who have not the financial resources for treatment, with the establishment of a hospital for their care and treatment. It is indeed a marvelous institution and deserving of perhaps the greatest respect of any medical institution in the state. It is manned and equipped with a medical staff and nursing staff of the highest type, and administers the most efficient orthopedic care. It is daily dismissing young people better equipped to cope with the common situations of the day. You would be surprised were you to go through this institution and see the number of children that have carried their disabilities for from one to fifteen years and more, before any effort has been made to correct them.

EDITORIAL PARAGRAPHS

"Every day in every way" the Nebraska State Medical Journal "is getting better and better and better."

Up in Duluth a dying patient bequeathed $500.00 to his physician "for kind and efficient surgical treatment."

It has been suggested that Methuselah might have been alive yet if some body had thought to remove his tonsils.

The coroner of Los Angeles reports 295 deaths from automobile accidents during the past fiscal year. But Los Angeles has a wonderful climate.

The American Medical Association annual meeting for 1923 will be held in San Francisco the last week in June, and San Francisco and California are already preparing for the event.

It would be difficult to find a body of medical men more efficient, earnest and painstaking than the twelve who constitute the Council of the Nebraska State Medical Association.

The Rockefeller Foundation has tendered a gift of $2,225,000 to the Iowa University College of Medicine, provided the state of Iowa will give a like amount to be used jointly for new hospitals, laboratories and new equipment.

The Magnuson X-Ray Co., Omaha, with commendable forethought and energy, featured a one week's intensive course in X ray and physiotherapeutics for the benefit of the profession during the week beginning December 11. Members of the Omaha profession were the lecturers.

The familiar greeting "Happy New Year" so recently heard may have added significanc to the Nebraska medical profession, for the outlook surely is brighter than it was one year ago. Nebraska's great staple—corn—commands a price that is compensatory to the grower and every mother's son, the poor doctor included, will benefit by at least a few kernels.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor, ... Madison, Neb.
R. B. Adams, M. D.,
Associate Editor, ... Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.
F. A. Long, Chairman ... Madison
W. O. Bridges ... Omaha
B. F. Bailey ... Lincoln
R. B. Adams, Ex officio ... Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII February, 1923 No. 2

Annual Meeting, Lincoln, May 14-17

THE LANCASTER COUNTY MEDICAL SOCIETY.

The medical profession of Lincoln was organized first, May 24, 1869. It has been reorganized on at least two occasions. Dr. J. M. McKesson came to Lincoln in 1863. Dr. H. D. Gilbert, Dr. George W. French, and Dr. J. W. Strickland were in practice in the vicinity of Lincoln before 1870. Those who attended the meeting of organization of the first county society were Drs. D. W. Tingley, F. G. Fuller, J. M. Evans, H. D. Gilbert, L. H. Robbins, and Geo. W. French. Later in the same year the names of Dr. J. W. Strickland, John W. Northrop, George A. Goodrich, and C. C. Radmore were added to the membership roll. Of the pioneer physicians mentioned above the only ones who appear as members of the Nebraska State Medical Society organized in 1868 are Drs. F. G. Fuller and L. H. Robbins (both 1870).

Dr. A. R. Mitchell, dean of the Lincoln profession, located in 1879 and was one of the organizers of the "Lincoln Medical Society" (over Harley's drug store) in November, 1880. Dr. W. L. Dayton, senior ophthalmologist in point of years of practice in Nebraska and the West, came to Lincoln in May, 1881. Dr. H. B. Lowry, Nestor of the society, became a member in 1881.

In 1887 the society began to discuss, "City Hospital," and the names of Drs. H. B. Lowry and W. L. Dayton appear as participants. In 1888 the society essayed to give and did give a banquet to the State Medical Society, an event which your editor well remembers, it being his first attendance at a State Medical Society meeting. In the meetings of 1890 the society vented its wrath on Salt Creek denouncing it as a nuisance. In the Secretary's report of 1895, three names appear of members in good standing who are now active—Dr. A. R. Mitchell, Dr. H. B. Lowry and Dr. A. I. McKinnon.

In May, 1896, the Western Medical Review Company was organized. Members of the organization now living are Drs. G. H. Simmons, A. R. Mitchell, W. L. Dayton, J. E. Cook, J. L. Greene (now Hot Springs, Ark.,) M. H. Everett. The Review continued in Lincoln for nine years but Dr. Simmons as is well known, advanced to the editorship of the Journal of the American Medical Association and has made for himself and for the national Journal a world wide and enduring reputation. In 1902 the society under the presidency of Dr. H. W. Orr, graduated from meeting in doctors' offices and held its first meetings in the Commercial Club rooms.

Largely through the influence of members of the county society, medical inspection of the public schools of Lincoln was inaugurated in 1903. Dr. H. J. Winnett, Dr. J. F. Stevens and Dr. Inez C. Philbrick were the early chief inspectors.

The development of St. Elizabeth's Hospital during a period of thirty years into a fine institution now conforming to the standards set by the American College of Surgeons, is in a measure due to the influence of the county society and members thereof, prominent among whom are Drs. W. L. Dayton, A. I. McKinnon, F. A. Graham, E. B. Finney, D. C. Hilton, J. S. Welsh and H. W. Orr.

In 1905 the Nebraska Orthopedic Hospital was established largely through the efforts of Lincoln physicians. This institution is now adequate to accommodate 100 patients. Dr. H. W. Orr has been chief surgeon for a number of years. Dr. J. H. Matthai is resident superintendent.

The sessions of the state legislature and the residence of state officers in Lincoln, has always placed the burden of helping to form state policy, in regard to medical matters, largely upon the members of this society. Lincoln doctors have always been called upon to meet emergencies and to face committees before whom such matters are primarily discussed. The present excellent condition of the State Board of Health may be ascribed in no small measure to the activities of the members of the county society, most prominent among whom must be mentioned Dr. E. W. Rowe, who as president of the Nebraska State Medical Association, 1915-16, organized the campaign that eventuated in the present law.

The Lancaster County Medical Society has grown to be an organization of 115 members, with an average attendance of 75. The policy and activities of the society have been broadened to include greater participation in city affairs and the discussion of problems of real scientific and professional merit for the benefit of those who attend the meetings. The meetings are held twice a month and follow a set program prepared for the entire year. Dr. J. J. Hompes is at this time president and Dr. D. D. Sanderson, secretary.

Some of the members who are taking an active part in professional and public matters at the present time are Dr. A. R. Mitchell, who is a member of the Board of Trustees of the American Medical Association; Dr. B. F. Bailey who was president last year not only of the county medical society, but also of the Lincoln Chamber of Commerce, and is now president of the Nebraska State Medical Association; Dr. K. S. J. Hohlen is chairman of the state legislative committee which interests itself in all legislative matters; Dr. E. W. Rowe is a member of the Lincoln Board of Education; Dr. H. J. Lehnhoff is a member of the state medical examining board; Dr. F. B. Hollenbeck is president of the staff of St. Elizabeth's Hospital, and Dr. George W. Covey is secretary; Dr. R. B. Adams is secretary of the State Medical Association.

On the whole it may be said that the Lancaster County Medical Society has developed along creditable lines, and that its present efforts as well as its members, are measuring up in fair degree to the standards set in years gone by, and to the example of those men who laid the foundation for medical practice and medical citizenship in Lincoln in former days.

DRUG THERAPEUTICS IN HEART DISEASE

In the application of drug therapeutics to the treatment of heart diseases, we are inclined of late years, to return to more or less well-known principles of materia medica. There is a certain sense of satisfaction in this tendency.

In the treatment of heart diseases, we are more or less inclined, either consciously or unconsciously, to accept the etiological classification of cardiac pathology as outlined several years ago by Richard Cabot. In that classification, Dr. Cabot placed practically all the cases in three groups, namely, first, those cardiac conditions due to arteriosclerosis; second, those due to infections of the rheumatic type; third, those due to syphilis. In the first group, no specific internal medication is indicated. In the last group, the specific medication has been indicated for years. In the other group, namely the rheumatic group, the profession, in recent years, is inclined to apply knowledge which has been more or less common for a number of years.

Several years ago, at a meeting of the American Medical Association in New York, there was a demonstration in clinics, at least at two hospitals, by a number of internists of wide repute, of a number of cases of endocarditis most of which were in either the acute or sub-acute stage. These cases were all given rather large doses of salicylates, usually 120 grains a day. The statement was made by as well qualified a man as Dr. Longcope that there had been tried a number of drugs in a treatment of acute rheumatism and that none had been found that was equal to the salicylates in the results produced. There was no question of the diagnosis in these cases. The rheumatic infection had attacked the heart valves, therefore, he applied and applied thoroughly a remedy long known to be effective. It would seem that this practice is absolutely sound. We have practically given up the idea that salicylates might do the heart some harm. The harm was done in the absence of salicylates in the early stages or in the absence of an adequate amount at a later stage. We can all improve in our treatment of rheumatic cases of cardiac infection if we apply, more earnestly and thoroughly, this well-known and well-tried therapeutic fact.

Now there is brought to our attention another well-known drug. We have used arsenic in the treatment of chorea for years with good results. We have recognized that chorea is the result of an infection of the rheumatic group. Few of us have applied the treatment by the administration of arsenic to any form of rheumatic infection except in that group which is characterized by the symptoms of chorea. Why not apply this drug in other types of rheumatic infection? Dr. Capps of Chicago, working in connection with Dr. Billings, was impressed with this idea and tried it. As a result of his experiment, he is able to report very good results in the treatment of certain cardiac conditions by the hypodermic injection of sodium cacodylate. The cases which he reported were practically all cases of malignant endocarditis. It is fair to suppose that arsenic, which for years has been recognized as a drug which can be profitably used to combat rheumatic infections, will, in the future, be employed in cases of rheumatic infection other than the group of malignant endocarditis.

Of late our attention has been called to the advantage of using quinidine in the treatment of certain irregularities. Quinidine undoubtedly has its place in cardiac therapeutics. We must not lose sight, however, of the fact that for years we have used digitalis in the treatment of irregularities with good results.

It may be well, too, to add that the application of the above drugs was in each case the result of empiricism and not the result of experimentation. Only of late have we known that in obtaining good effects from digitalis in the treatment of irregularities that the digitalis was doing what we always feared it might do, namely, it decreased the power of conduction and thereby increased a partial heart block.

—H. J. Lehnhoff.

WATER FOR THE BABY

Next to air and sunshine, water is perhaps the greatest therapeutic agent at our command. Especially in infancy and childhood we are confronted with little patients, whose food intake is so low that a state of malnutrition exists. If this condition continues to an extreme degree, we speak of the baby as an athreptic infant. If the skin loses its elasticity and the mucus membranes become dry, we speak of the condition as anhydremia. This is a condition where the amount of water eliminated from the body becomes greater than the amount taken in, and desiccation of the blood and tissues take place. In more simple language, the infant is dehydrated and the tissues are crying out for water.

Any infant that vomits is in great danger of dehydration because fluids are being lost at the expense of the body. Any infant that has a diarrhoea is in great danger of dehydration becuase great loss of fluids is taking place through the bowel. Any infant that has a fever from an infection is in danger of dehydration because the feverish infant frequently refuses to eat, and sometimes to drink, and the water is burned up with the excessive heat.

We might think in terms of positive and negative water balance. Whenever the water balance is negative, you are very apt to detect an actone odor to the breath (acetonemia) and vomiting is very apt to occur. A cathartic administered with these symptoms present is very likely to precipitate an acidosis, or at least a still further dehydration of the infant. Therefore, we may be justified in the following conclusions:

1. If a child is not taking, or will not take the required amount of food, then large amounts of water must be ingested.

2. If a child is having a rise of temperature, and in the first stage of an infection, do everything possible to keep up a positive water balance by the ingestion of large amounts of fluid, and preferably alkaline fluids.

3. If a child is vomiting, think of a negative water balance and proceed to force fluids by other routes than the mouth, viz., proctoclysis, hypodermoclysis, or intraperitoneal.

4. If the water balance is negative it is inadvisable to give a cathartic, as the result will be to still further dehydrate and endanger the infant to an acidosis.

—W. O. Colburn.

REVIEWING THE MEDICAL PROFESSION

The last campaign for the control of cancer in this state placed the medical profession on "Review."

From my observation, in some instances at least, it was "the blind leading the blind." When a teacher of medicine and surgery is content to cite a retracted nipple as an evidence of cancer of the breast, it is time to stop and taken an inventory. We can hardly expect the busy practitioner to be more progressive than the source of his education. This implies that the medical profession must revise obsolete text book diagnosis and treatment, to conform with present day knowledge.

Cancer, generally speaking, is the result of continuous irritation of some diseased area. The elimination of the irritation and of the pathology is necessary to prevent malignancy.

It is prevention, not cure, that must be our endeavor. No one thinks of "curing" smallpox, typhoid fever and such ailments. Every modern medical man accepts their prevention as an established practice.

With the advance of prevention goes requirement for the application of advanced surgical technique. In my judgment this infers painless, esthetic, thoughtful procedures. Our past mutilating operations were not inspiring to the public. Cooperation of the laity is essential for the solution of this problem. To receive this cooperation we must warrant it. It will require continued education of the laity, and of no small number of physicians to accomplish the desired results. All of which is worth the time, energy, and cost.

—A. I. McKinnon.

ABOUT BREEDING

It was pointed out by Carl Pearson several years ago that one-half of the births in England were being produced by one fourth of the population, and that this extra-prolific one-fourth was the lowest fourth judged by intellectual and social standards. As a matter of fact, most civilized nations today are recruiting their populations from the bottom layers of society. They are not having their peoples well-bred. While their births are selective they are based on the worst possible selection. It may be urged that this makes little difference in countries where men are born free and equal and have equal opportunities for development. There are ample reasons for believing, however, that success in the multifarious affairs of life indicates superior mental and physical capacity. It is a well known fact that the birth rate of the well to do and intelligencia of all civilized countries has been steadily shrinking for the past half century, while those groups content to follow in the rear, the less energetic and ambitious, the unfit mentally and physically, the camp followers, the ne'er-do-wells, breed to their hearts' content. The biological law that progress in the evolutionary scale is made at the expense of fecundity is thus stated by Herbert Spencer:—"The fertility of any species varies inversely with the development of the individuals of that species." There seems to be ground for believing that this law is as applicable to the individual as to the species, and that the higher his intellectual development the less becomes his power of procreation. Indeed, Gide, in his discussion of Malthusianism, expresses the hope that as the race progresses mentally and morally its fecundity will slacken. This will never effect the lower strata of society, however, and only the high death rate induced by the conditions under which they live and multiply saves civilization from being engulfed by the seething precipitate from below. These are the people who are multiplying and replenishing the earth today. Now what do we see in these United States of America? The graduates of Harvard, our most famous school of learning, barely perpetuating themselves, while 1193 graduates of Bryn Mawr in twenty-five years produced 263 girls all told. One in ten of our young men, as determined by the psychological tests for the draft, was so below par mentally that he was unsafe to send to France, and was left to do routine menial labor at home. It is from this one-tenth that our jails, our state schools and our feeble-minded institutes are recruited; but we allow them to marry and propagate themselves, and too often without the former formality. Our sickly sentimentality forbids their sterilization, or even segregation, and even invites them to make laws for us by giving them the ballot. The Spartans, with our knowledge, would have done far better. They would at least have rendered them incapable of propagating themselves and applied Mendelian principles to human breeding. Are we less wise than the Spartans?

—S. E. Cook.

A MESSAGE FROM THE BUREAU OF HEALTH

The Vital Statistics Division of the State Bureau of Health has recently completed a tabulation of the births and deaths occurring in this state during the year 1921. You will will find (see pages 79-80) an abstract of some of these statistics giving the number of deaths from all causes and ages, the number of live births occurring that year in each county, and the number of still births. However, the number of still births is not included in either the total number of births or the total number of deaths.

A further analysis of these figures shows that for every 161 live births occurring in the state, one mother died from causes incident to child birth. Out of 1,893 deaths of babies under one year of age, 1,227 of them died before they were one month of age. To this 1,227 might be added the 1,031 still births, making a total of 2,258 babies who were either born dead or died shortly after their birth.

If more babies and mothers are to be saved, it will be necessary to develop a program that will bring prenatal instruction and the best confinement care to the prospective mothers of Nebraska.

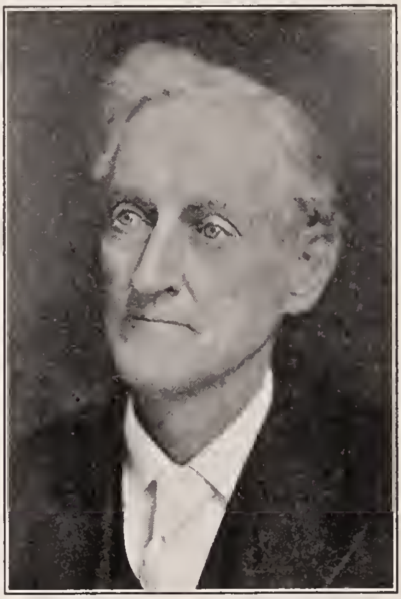
The four field nurses connected with this bureau working in conjunction with the provisions of the Sheppard-Towner Act and the Division of Child Hygiene of this Bureau have assisted in holding Baby Health and Maternity Conferences in this State in which over three thousand babies have been examined and instruction and advice given to their mothers looking to their better care.

During the past six months several thousand copies of bulletins and literature on prenatal care and better care of the baby have been distributed throughout the state. This work is only just begun. We solicit your assistance, cooperation and support for it in the future.

—I. H. Dillon.

NECROLOGICAL

Dr. Charles Inches, New York University Medical College, 1868, a much loved practitioner at Scribner from 1880 until a few years ago, when failing health compelled retirement, died at his home of a heart affection December 11, aged about 76 years. The deceased was president of the Nebraska State Medical Society 1891-92. He was of endearing personality and an outstanding character among the medical men of his adopted state. He was a great lover of good literature, a deep thinker and a quaint philosopher. He was a native of New Brunswick. A widow and two daughters survive. A brother, Dr. James Inches, Detroit, was with him at the end.



DR. CHARLES INCHES

Dr. Andrew D. Nesbit, Jefferson Medical College, 1887, for thirty-five years a prominent physician of Tekamah, died of apoplexy, December 13, after an illness of a few hours, in his sixty-third year. The deceased had for many years been active in the Nebraska State Medical Association and was its president in 1911-12. He was president of the Farmers State bank of Tekamah and a member of the Mitten and Nesbit department store at the time of his death. He was active in all civic and community projects. A moving story of the community life of Tekamah and Burt county would be the story of his

DR. ANDREW D. NESBIT

life. He was of a singularly pleasant disposition and a friend to all with whom he came in contact. He was a native of Bradford county, Pennsylvania. He is survived by a widow and one daughter.

Dr. James S. Stockwell, University of Michigan about 1862, for thirty years a resident and practitioner of Butte, died December 19, from the effects of an apoplectic attack, aged about 88 years.

Dr. John H. Long, Minnesota University Medical College, 1888, died at Lincoln, December 10, aged about 78 years. The deceased was at one time in the Indian Service at Pine Ridge Agency, S. D. He was engaged in practice at a number of points in Nebraska, notably, Rushville, Bayard, Omaha, Loup City, Greeley, Palmyra and for the past seven years in Lincoln.

Dr. L. S. B. Robinson, Harvard Medical School, 1901, for several years previous to June 1, 1918, superintendent of the Nebraska Hospital for Tuberculous at Kearney, lately a Major in the U. S. P. H. S. assigned to various sanatoria for the tuberculous, died at San Diego, December 17, aged 48 years.

WANTED:—An able and skillful Eye, Ear, Nose & Throat Specialist wants association with a strong ethical firm in general or special practice in either Omaha or Lincoln. Address Box D care of this Journal.

NOTES ABOUT THE DOCTOR

Dr. G. W. Strough, formerly of Collegeview, has moved to Garland.

Dr. A. C. Colman, Chappell, is another medical man elected to the legislature.

Dr. W. H. Mick, Omaha, is plaintiff in a damage suit as the result of an assault.

Dr. H. F. Morrison. Lincoln, will locate in Cedar Park, N. Y., early in February.

Dr. C. E. Protzman, for some time a physician at Garland, has located at Lincoln.

Dr. C. W. Jester, Doniphan, has been reported very ill at a Grand Island hospital.

Dr. C. E. Mullinax, Hastings, has gone to Philadelphia for a six month's period of study.

Dr. Herbert Davis, Omaha, has gone to New York for several months of special hospital work.

Dr. A. A. Robertson, Council Bluffs, Iowa, lost his entire armamentarium by a fire recently.

Dr. W. B. Moody. formerly of Chicago, has become resident pathologist at the Methodist Hospital, Omaha.

Dr. H. B. Lowry, Lincoln, has been elected president of the State Historical Society for the ensuing year.

Dr. F. H. Kucera, Verdigre, who has been ill at a Norfolk hospital for some time, has returned to his home.

Dr. Joseph Bixby, Geneva, was slightly injured in a collision of his Ford coupe and a locomotive tender, January 2.

Dr. J. W. Turner, Sterling, has been a surgical patient at a Lincoln hospital for some time and has been reported very ill.

Dr. Ira H. Lockwood, for several years roentgenologist at Green Gables, has become associated with Dr. E. H. Skinner, Kansas City.

Dr. Everett Angle, son of Dr. E. J. Angle, Lincoln, has become resident neurologist of the New Jersey State Hospital at Trenton.

A former Table Rock boy, Dr. Roy W. Martin, has been elected to the legislature in Nevada, where he has been in practice for some years.

A grip containing valuable surgical instruments was stolen from the car of Dr. C. E. Frey on the business streets of Lincoln, New Year's day.

Dr. Newell Jones, child specialist of Omaha for some years has moved to Pasadena, Calif., on account of the health of a member of his family.

Dr. H. von W. Schulte, dean of the Creighton University College of Medicine, addressed the Lincoln Alumni Chapter, at St. Elizabeth's hospital on the evening of January 5.

Dr. J. S. Shields, at one time located at Bertrand, but now government physician on the Navajo Indian Reservation, in Arizona, visited his brother, W. D. Shields, Holdrege, recently.

A former Fremont woman, Mrs. James H. Huddleson nee Pascoe, the wife of a New York physician, is the author of a forthcoming work on dietetics to be issued by the Appletons.

Major C. M. Sampson, of the Army, gave a lecture on Physiotherapy at the University Club in Omaha, Dec. 7. Great interest was manifested in his film showing his research work in the army.

The office of Dr. C. W. Walden, Beatrice, was entered by a drug fiend and ransacked for narcotics. Dr. Walden need not feel particularly "stuck up" to be singled out in this manner, for your editor had a like experience about the same time.

Dr. Margaret Koenig, who six months ago went to Tennessee to make a health survey for the Children's Bureau, visited at Lincoln during the holidays. Dr. Koenig has been transferred to Oklahoma for a six months period of work in a like capacity.

Keep your Delegates interested, and be sure that they attend the next Annual Meeting. One-hundred per cent attendance is desired.

THE SOCIETIES

Dr. and Mrs. P. A. Sundbury and Dr. and Mrs. J. A. Magill were hosts to the members of the **Phelps County Medical Society,** on the evening of Dec. 12. A well appointed dinner was served. Officers elected for the year 1923 are Dr. Guy Clark president; Dr. J. A. Magill, Holdrege, secretary-treasurer; Dr. W. A. Schreck, delegate.

At a meeting of the Omaha section of the **American Chemical Society,** December 19, Dr. C. F. Crowley was elected chairman and N. R. Perkins, secretary-treasurer.

The **Nemaha County Medical Society** met at Auburn on the evening of December 13, and elected Dr. Stonecypher, Peru, president, Dr. I. W. Irvin, Auburn, secretary-treasurer. Dr. Clyde Moore gave a talk on diphtheria and Dr. R. D. Schrock talked on the prevention of deformities and presented a clinic.

The **Scottsbluff County Medical Society** held its annual meeting December 19, and elected Dr. W. E. Shike, Gering, president, and reelected Dr. W. C. Harvey, Gering, secretary-treasurer. Dr. F. W. Plehn, Scottsbluff, read a paper on the "Business Side of Medical Practice."

Over a 6:30 dinner served at the Pathfinder, Fremont, the **Dodge County Medical Society** held its annual meeting and elected Dr. J. S. Devries, Fremont, president, and reelected Dr. Grant S. Reeder, Fremont, secretary-treasurer. City health and welfare work were discussed.

At the annual meeting of the **Hall County Medical Society**, Dr. W. J. Raynor was elected president, Dr. E. D. Ryder, secretary-treasurer and Dr. E. G. Johnson, delegate.

Before the **Johnson County Medical Society**, Tecumseh, December 27, Dr. W. L. Curtis, Lincoln, gave a demonstration in bronchoscopy. Dr. A. P. Fitzsimmons was elected president, Dr. Dora Judkins-Davies, secretary-treasurer, and Dr. G. J. Rubelman, delegate.

The **Interstate Society of Radiology and Physiotherapeutics** was organized at the Fontanelle hotel, Omaha. December 16. Dr. Charles S. Mullins, Broken Bow, Neb., is president, and Dr. Roland G. Breuer, Lincoln, secretary-treasurer. Dr. T. Howard Plank, Chicago, gave an illustrated lecture at the banquet given in connection with the meeting.

The **Lancaster County Madical Society** gave a farewell dinner in honor of Dr. Ira H. Lockwood and Dr. Harold F. Morrison, at the Lincolnshire Club, January 18.

The **Iowa and South Dakota Section of the American College of Surgeons Clinical Meeting** was held at Council Bluffs, January 8 and 9. The **Nebraska, Kansas and Oklahoma Section** met at Topeka, January 15 and 16.

The **Central Section of the American X-ray Society** will hold its midwinter meeting in Louisville on Saturday, February 24th, 1923, for one day including an evening session. All members of the Nebraska Association are invited and those interested in X ray work are urged to attend.

The **Sioux Valley Medical Association** held its 26th, midwinter meeting at Sioux City, January 25 and 26. Quite an array of imported talent was on the program.

The **Sioux Valley Eye and Ear Academy** met at the West Hotel, Sioux City, January 24.

The **Madison County Medical Society**, after a chicken dinner on the evening of January 10, at Norfolk, heard papers discussing the different phases of plurisy by Dr. H. G. Morris, Newman Grove, Dr. F. X. Rudloff, Battle Creek, and Dr. A. C. Barry. Fifteen doctors attended.

Anyone wishing to read a paper at the Annual meting of The State Medical Association, please send name and title to the office of the Association, Omaha Loan and Bldg., Association Bldg,. Omaha, Neb. Doctors out in the state are especially urged to send in titles.

HOSPITAL NOTES

The Misses Emma and Mamie Matzen, graduate nurses, now have full charge of the Columbus hospital.

The Dimock hospital, Scottsbluff, has passed into the hands of Mrs. Robert Harvey, who intends to operate it until the opening of the Methodist hospital next spring.

It has been determined by the Methodist hospital board to put the William Jennings Bryan Fairview property into use as a hospital in the immediate future. Approximately, between three and four thousand dollars will need to be expended before a start can be made.

Dues for 1923 are now delinquent. They are $5.00. Send yours at once and avoid losing your Journal and Defense.

MEETING OF THE BOARD OF COUNCILORS.

January 15, 1923.

The annual meeting of the Board of Councilors was held at the University Club, Omaha, on January 15, 1923, at 6:00 p. m., with the following members present: Morris Nielsen, A. P. Overgaard, H. J. Lehnhoff, C. P. Fordyce, A. E. Cook, Frank Tornholm, H. E. Potter, R. D. Bryson. N. T. Johnston, C. A. Selby and A. J. Stewart. They had as their guests: President B. F. Bailey, Vice President R. W. Fouts, Secretary-Treasurer R. B. Adams, Editor F. A. Long; the program committee: E. L. Bridges and K. S. J. Hohlen and A. J. Brown, I. H. Dillon and Gene Huse.

After short talks by the editor, president and vice president the meeting was called to order by the chairman and the Board proceeded to the election of officers. Upon motions, duly seconded and carried, Dr. Nielsen was reelected chairman and Dr. Overgaard reelected secretary.

The following reports for the year 1922 were then presented:

SECRETARY-TREASURER.

On December 31, 1922, the membership of the Nebraska State Medical Association was 1206. This is an increase of 15 over the preceding year. There were 56 active county societies. No county societies became inactive during the year and no new counties were organized. District meetings were held in all but one of the Councilor Districts and the meetings were successful and well attended.

The Program Committee, as instructed, arranged the program for the meeting in April. This was the largest meeting from the point of view of attendance in the history of the Association.

R. B. Adams.

LIBRARIAN.

In presenting my annual report as librarian of this Association for the year 1922, I am pleased to say there has been a very appreciable awakening, among the membership, to avail themselves of the opportunities presented in our University connection.

There have been some 38 inquiries for information. Twelve bibliograhies have been furnished at an expense of $15.00.

I have asked the Librarian of our State University Medical School to supply part of this report. I trust that this will be carefully read and its information disseminated among the fellows of our Association.

There have been received 27 books and most of the issues of the various State Medical Societies.

Respectfully submitted,
W. P. Wherry.

Report of the Library, Jan. 1 to Dec. 1, 1922.

Periodicals—200 on current list, 30 supplied from Nebraska State Journal office.

Books—1600 added to the shelves and catalogued, many more ready to be listed. Large proportion of gifts from other libraries through, the Medical Library Association, individual donors and bequests.

Reprints—Between 200 and 300 received, mostly from the Douglas county doctors. All doctors in the state are urged to supply the Library regularly with their reprints for permanent file.

Questions answered and bibliographies supplied to 12 physicians and 17 different requests looked up for out-of-town patrons.

Library Hours—Monday, Tuesday, Wednesday and Thursday, 9 a. m. to 1 p. m. and from 2 p. m. to 4:30 p. m. Hours have been considerably lengthened and the use of the Library is increasing among practicing physicians as well as among the student body of the College of Medicine.

Growth of the Library—All available space in present quarters has been filled and action is necessary to build a separate library building. Size of library is 20,000 books which compares very favorably with all medical libraries of the west.

Medical Library Association—Held its session at the same time as the A. M. A. in St. Louis, May 19-23, and was attended by the Librarian of the College of Medicine. Visits were made to all libraries in St. Louis and in Kansas City and exchanges arranged.

MEDICO-LEGAL DEFENSE COMMITTEE.

The following report is submitted for the year ending 1922:

The illegal practitioners in the State of Nebraska seem to be somewhat on the increase, or it may be that they are just being brought to the consideration of the Defense Committee. We have been successful in stopping two such practitioners. We have had called to our attention during this year, four people who were engaged in the illegal practice of medicine. These cases are all under the care of the Committee, and we are endeavoring to bring these persons to account. We find, however, some little difficulty along this line, for the reasons that a local doctor does not like to be involved in the prosecution of any of these cases. and that the Secretary of the Department of Public Welfare, seems a little reluctant to proceed in any of these cases. We can only ascribe this to the fact that he does not desire to seemingly assume an attitude of protecting any one school of practitioners to the detriment of another. We also find some difficulty in procuring the proper cooperation of the local county attorneys. In order to properly function in this line of new activities, it will be necessary for the Defense Committee to have the support, not only of the Department of Public Welfare, but also the county attorney of the county in which the crime is being committed, and the local doctors. In our last report we held out some hope of being able, by law, to enjoin persons from illegal practice of medicine. The case, however, which was heard in the Supreme Court to establish this rule of law in the State of Nebraska, was determined adversely to our interests and, therefore, we cannot hope to procure any relief from such practices through courts of equity.

Last year we reported three new medical cases as having arisen during that time. We must advise you that five new cases have been called to our attention this year. Four of these cases have been tried during this year. Two of them resulted in verdicts for the doctor. Of the other two tried, one resulted in a verdict of $1,500.00 against the doctor. However, the attorney for the committee is of the opinion that no verdict should have been returned on the evidence which was adduced at the trial, and the Court wherein the case was heard has sustained the motion of the doctor for a new trial. In the other case we have a peculiar circumstance arise. This case involved what was claimed to be an X-ray burn and the plaintiff managed to secure one physician and surgeon, who is not a member of the State Association. to testify in his behalf. This doctor took a decided interest in the case, and after we had tried it for two and one-half days, managed during a recess period to converse with one of the jurors. This matter was called to the attention of the court by the plaintiff's attorney. The juror being disqualified, we offered to proceed with eleven jurors or submit the case to the court, both of which propositions were refused. This, of course, meant that there was nothing for the court to do except to dismiss the jury, the result being a mis-trial. Out of the cases which we had pending in our last report, we have disposed of five others cases, all favorably to the doctors. In our last report, we also indicated that there were two threatened suits which had been called to the attention of the Committee. No action has been instituted in either of these matters, and we, therefore, take it that nothing further may be expected from them.

We have, therefore, pending for our new year's work, seven mal-practice cases.

Respectfully submitted,
J. S. Welch, Associate.
R. B. Adams, Secretary.
A. S. Mansfelde, Chairman.

COMMITTEE ON MEDICAL EDUCATION

As chairman of the Committee on Medical Education and Hospital Standardization, allow me to report that our work for the year 1922 is just closing, and we are preparing a detailed report for the State Association and the A. M. A. Council which meets in March. Our endeavors this past year have been to get some report from every hospital in the state. In our communications with these hospitals it has been our desire to stimulate in every way possible a greater degree of standardization. In some localities our efforts have failed absolutely, but on the whole we find a healthy, growing interest in hospital standards. In the larger hospitals a detailed survey has been made, whether they were asking for interns or not.

This final report should provide for your files, therefore, the following details:

A. For the smaller hospitals:
   1. Total number of hospitals in each county.
   2. Name and location of same.
   3. Total number of beds.
   4. Average occupied beds.
   5. Staff names.
   6. Number of patients during past year.
   7. Ownership.
   (Also something of the degree of standardization attained by these hospitals has

been attempted, therefore, the report should show whether these hospitals have:)

8. Superintendents.
9. Training Schools.
10. Written and indexed histories and case records.
11. Staff meetings.
12. Correct operating room equipment.
13. Functioning laboratories.

B. For the larger hospitals the investigation has been made according to the standards adopted by the A. M. A. Council on Medical Education and Hospitals. It will include, therefore:

1. Some details of physical plant.
2. Attending staff data.
3. Department representation.
4. Organization and administration.
5. Additional activities.
6. Community service activities.
7. Research facilities.
8. Records and history forms.
9. Special problems.

This work has been made possible only by the assistance and cooperation of a number of County Secretaries and certain other members of the Assotion, and your committee desires to take this opportunity to thank them for this cooperation.

J. S. Welch, Chairman.

COMMITTEE ON CARE AND PREVENTION OF CONTAGIOUS DISEASES.

We, your Committee on the Care and Prevention of Contagious Diseases, beg to submit the following report for the year 1922.

During this year there was no serious epidemic of contagious diseases in the State. The organization of county, city, town and village Boards of Health remained the same as the preceding year, and the scheme of reporting contagious diseases has been unchanged. The following total number of contagious diseases has been reported from the various Boards of Health throughout the State:

Chickenpox	1058
Diphtheria	1280
Encephalities Lethargica	13
German Measles	17
Influenza	1194
Malaria	1
Measles	2204
Meningitis, Cerebrospinal	15
Mumps	799
Pneumonia	82
Poliomyelitis	24
Scarlet Fever	2272
Septic Sore Throat	32
Smallpox	484
Tetanus	3
Tuberculosis	178
Typhoid Fever	141
Whooping Cough	169
Total	9966

Respectfully submitted,
I. H. Dillon, Chairman.

It was moved, seconded and carried that the reports be received and published.

Reports from the Public Policy and Legislation Committee and Campaign Committee were read and placed on file.

Drs. Potter, Lehnhoff and Selby were appointed by the chair to audit and examine the records of the funds of the Association. They reported as follows:

GENERAL FUND.

Jan. 1, 1922, Balance		$ 785.98
Receipts		
From Dues	$6,040.00	
From Rent & Sale of Desk	63.50	
From Interest	38.68	
		6,142.18
		$6,928.16
Disbursements.		
Investment	$1,000.00	
Transferred to Journal Fund	1,812.00	
Transferred to Defense Fund	1,208.00	
Salary — Sec.-Treas.	583.34	
R. R. Fare Sec.-Treas.	16.12	
Office Rent	250.72	
Telephone	76.00	
Printing and Stationery	135.75	
Stamps and Office Supplies	135.00	
Auditing Books	31.00	
Convention Reporter	130.00	
Convention Expense	47.50	
Surety Bond	5.00	
Delegates' R. R. Fare	54.99	
Campaign Committee	400.00	
Councilors' Expense	339.76	
Councilors' Reprints and Exp.	110.10	
Bank Exchange and Misc.	9.00	6,344.28
Balance, Dec. 31, 1922		583.88
		$6,928.16

DEFENSE FUND

Jan. 1, 1922, balance		$1,020.87
Receipts		
From Interest	$ 29.41	
From General Fund	1,208.00	1,237.41
		$2.258.28
Disbursements.		
A. S. v. Mansfelde, salary	550.00	
A. S. v. Mansfelde, com. exp.	100.00	
H. A. Bryant, attorney's fees:		
General Serv.	100.00	
Morgan-Smith case	75.00	
Williams & Williams: Morgan Smith	100.00	
E. G. Caldwell: Ferguson-Reed	50.00	
W. V. Hoagland & Carr: McMaster-Redfield	150.00	
A. W. Scattergood: Carpenter-Remy	31.68	
Munn & Norman: Barta Case	15.00	
Jno. C. Mullen: Prater-Hustead & Fouts	200.00	1,371.68
Balance in Fund Dec. 31, 1922		886.60
		$2,258.28

JOURNAL FUND

Balance, Jan. 1, 1922		$1,663.73
Receipts		
Collections—1922:		
From Subscriptions	$1,843.55	

From Advertising	4,416.83	
From First Trust Co.	1,060.00	
		7,320.38
		$8,984.11
Disbursements		
Salaries	1,380.00	
Press Clippings	42.00	
Publication Expense	3,711.55	
Investments	2,060.00	
		$7.193.55
Balance, Dec. 31, 1922		1,790.56
		$8,984.11

It was moved by Dr. Cook that the report of the auditing committee be received and published and that the committee be discharged. Motion seconded and carried.

It was moved by Dr. Tornholm that the chairman and secretary be authorized to draw up resolutions to send to the families of Dr. Nesbit and Dr. Inches, and that a copy be spread on the records. Motion seconded and carried.

After a discussion as to the advantage of changing the time of meeting of the House of Delegates at the annual convention, it was moved that the first two meetings be held at 1:00 p. m., with the meeting on the last day at the usual hour, 8 a. m., and that the evening session formerly held on Monday be dropped. Motion seconded and carried.

Dr. Adams presented the question of the advisability of forming a new committee composed of members from the State Association and other associations interested in public work, whose function would be to look after general legislation and educational matters along preventive medical lines. It was moved that this plan be endorsed by the Council and that it be brought before the House of Delegates at the next meeting. Motion seconded and carried.

It was moved that a committee of three be appointed to consider the question of redistricting the state into Councilor Districts, the committee to make recommendations and report at the annual meeting of the Association. Motion seconded and carried. The chair appointed Drs. Stewart, Selby and Bryson to serve on this committee.

It was moved that the secretary of the Association and secretary of the Council be instructed to invest any surplus funds according to their judgement.

Summary of Councilor's Reports—1922

District	Members	Deaths	Expense
1	308	4	
2	139	3	$14.00
3	79	1	23.50
4	81	1	30.79
5	103	3	27.22
6	79	0	44.50
7	75	0	24.50
8			
9	92		31.52
10	102	1	82.00
11			
12	31	0	96.25

NEBRASKA VITAL STATISTICS

1921 Figures—Exclusive of Stillbirths

County	Population 1920	Births	Stillbirths	Deaths All Ages	Maternal Deaths	Infants Under 1 yr.	Infants Under 1 mo.
Adams	22,621	518	23	303	4	25	18
Antelope	15,243	392	7	120	1	19	13
Arthur	1,412	30	0	11	1	1	0
Banner	1,433	18	1	3	0	2	2
Blaine	1,788	44	2	9	0	1	0
Boone	14,146	380	9	87	1	15	11
Box Butte	6,407	283	14	95	3	25	17
Boyd	8,243	194	2	72	2	11	7
Brown	6,749	167	5	69	4	9	6
Buffalo	23,787	582	14	215	5	23	17
Burt	12,559	343	6	107	1	17	11
Butler	13,723	331	5	107	1	18	13
Cass	18,029	412	12	152	1	20	19
Cedar	16,225	456	16	104	1	31	22
Chase	4 929	158	4	33	2	5	1
Cherry	11,753	267	4	78	2	13	8
Cheyenne	8,405	316	9	65	0	15	10
Clay	14,486	344	9	114	2	13	12
Colfax	11,624	253	4	71	1	10	4
Cuming	13,769	377	6	105	0	18	15
Custer	26,407	724	11	181	6	33	23
Dakota	7,694	190	4	44	1	12	10
Dawes	10,160	237	10	75	1	17	11
Dawson	16,004	407	13	112	2	16	10
Deuel	3,282	89	4	18	0	4	2
Dixon	11,815	276	7	80	2	11	8
Dodge	23,197	554	15	216	1	32	25
Douglas	204,524	5,033	200	2,669	39	388	228
Dundy	4,869	171	5	39	0	6	5

County	Population 1920	Births	Stillbirths	Deaths All Ages	Maternal Deaths	Infants Under I yr.	Infants Under I mo.
Fillmore	13,671	299	8	102	1	16	9
Franklin	10 067	243	6	87	0	9	7
Frontier	8,540	219	8	36	0	5	4
Furnas	11,664	335	5	135	2	19	11
Gage	29,721	693	18	295	3	52	33
Garden	4,572	152	4	30	2	9	6
Garfield	3,496	116	3	31	0	3	2
Gosper	4,669	123	3	27	0	7	5
Grant	1,486	38	3	8	0	3	2
Greeley	8,685	234	6	66	2	17	12
Hall	23,783	533	27	306	6	37	21
Hamilton	13,237	541	12	92	0	17	8
Harlan	9,220	259	4	68	2	14	11
Hayes	3,327	114	2	24	2	9	7
Hitchcock	6,045	166	1	57	3	17	14
Holt	17,151	430	17	135	4	25	17
Hooker	1,378	30	1	6	0	1	0
Howard	10,739	233	3	84	1	12	12
Jefferson	16,140	386	9	126	1	10	9
Johnson	6 940	241	8	75	1	11	5
Kearney	3,583	197	2	75	1	15	15
Keith	5,294	117	5	29	2	5	3
Keya Paha	3,594	54	3	18	1	2	2
Kimball	4,498	117	2	27	0	7	5
Knox	18,894	484	25	146	4	31	20
Lancaster	85,902	1,995	69	1,046	17	124	78
Lincoln	23,420	580	33	171	6	28	6
Logan	1,596	53	0	16	0	8	4
Loup	1,946	33	1	8	1	2	1
McPherson	1,692	27	1	10	0	2	2
Madison	22,511	537	30	305	8	38	21
Merrick	10,763	257	7	88	2	20	18
Morrill	9,151	252	8	56	1	17	11
Nance	8,712	233	10	67	1	19	15
Nemaha	12,547	313	7	93	2	14	8
Nuckolls	13,236	329	7	110	1	23	16
Otoe	19.494	404	20	154	0	25	20
Pawnee	9,578	236	6	80	3	7	5
Perkins	3,967	142	1	23	0	6	2
Phelps	9,900	211	7	88	1	8	8
Pierce	10,681	325	3	88	3	17	13
Platte	19,464	549	22	216	3	40	23
Polk	10,714	238	8	66	1	6	4
Redwillow	11,434	345	7	112	1	15	9
Richardson	18,968	455	12	153	2	20	15
Rock	3,703	98	4	15	0	2	2
Saline	16,514	344	15	152	2	19	15
Sarpy	9,370	160	3	48	1	9	5
Saunders	20,589	410	10	178	1	34	21
Scottsbluff	20,710	628	20	167	5	34	20
Seward	16,867	436	18	157	2	27	12
Sheridan	9,625	248	10	65	2	9	3
Sherman	8,877	261	6	47	0	12	7
Sioux	4,528	87	3	17	0	7	6
Stanton	7,756	201	6	49	0	12	10
Thayer	13,976	361	8	126	0	18	16
Thomas	1,773	50	1	10	2	3	2
Thurston	9,589	320	9	112	2	27	14
Valley	9,823	228	10	73	1	9	5
Washington	12,180	246	11	91	1	12	6
Wayne	9,725	261	9	71	2	20	16
Webster	10,922	291	8	80	0	16	9
Wheeler	2,531	47	3	12	0	4	2
York	17,146	368	12	166	4	17	9
Total		32,259	1,031	12.025	200	1,893	1,227

RURAL NEBRASKA NUMBER

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, March, 1923. No. 3

CONTENTS

Page
The Induction of Labor At Term, W. W. Arrasmith, B. S., M. D., Grand Island, Neb. ... 81
The Type of Diet As An Etiologic Factor in Diabetes Mellitus, J. E. Meyer, M. D., Columbus, Neb. ... 89
Some Clinical Phases of Diabetes Mellitus, Willis J. Raynor, M. D., Grand Island, Neb. ... 93
Peptic Ulcer, J. M. Willis, M. D., McCook, Neb. ... 95
The Interpretation of Fevers in Children, John V. Reilly, M. D., Grand Island, Neb. 97
Medical Practice As a Business, W. R. Boyer, M. D., Pawnee City, Neb. ... 99
Double Uterus and Report of Case, A. L. Kee, M. D., Cambridge, Neb. ... 101
Acute Appendicitis Complicating Pregnancy, A. W. Anderson, M. D., West Point, Neb. ... 102
Ruptured Tubal Pregnancy: A Case Record, Chas. F. Ulrich, M. D., Valentine, Neb. ... 105
Non-Tuberculous Inflammation of Cecum. Report of Case, Frederick G. Kolouch, M. D., Schuyler, Neb. ... 106
Page
Primary Uterine Inertia in Twin Pregnancy Following Premature Rupture of Membranes, A. Townsend, M. D., Minatare, Nebraska ... 107

EDITORIALS—

Annual Dues ... 108
Papers ... 108
Delegates ... 108
The Profession of Rural Nebraska ... 108
A Federal Department of Education, Health and Welfare ... 108
A Point of View ... 109
Sex Education from a Physician's Viewpoint ... 109
Heredity in Disease ... 110
A Pioneer Physician of the Elkhorn Valley: Dr. Alexander Bear ... 111
The San Franscico Meeting ... 113
The American Congress on Internal Medicine ... 113
Reports Wanted on Fungus Diseases of Man ... 113
The Societies ... 113
Hospital Notes ... 114
Notes About the Doctor ... 114
Necrological ... 114

THE INDUCTION OF LABOR AT TERM.*

W. W. Arrasmith, B. S., M. D., Grand Island, Neb.

We wish to preface this paper by admitting a deep obligation to Dr. Chas. B. Reed of Chicago, who in our observation is the pioneer in the technique we are about to describe. It has been our privilege and happy experience to share the toils and help carry the burdens of this eminent obstetrician and it is with a feeling of the deepest reverence and obligation that we shall quote him from time to time as well as borrow from the statistics, part of which accrued during our association with this scientist and gentleman.

For over a century, dating to the time of Van Deventer 1701, the utmost thought in the minds of obstetricians has been directed toward the study of contracted pelves and the hazards and dangers associated with these anomalies in the course of pregnancy and labor. To these stimuli obstetricians have added to and subtracted from, until our art has been rewarded by technical accessions to our knowledge of wide and far reaching importance so essential and vital indeed, as to constitute the very foundation of our obstetric science.

During this interim, little or no concern has been given the large, the mature or the postmature child. It becomes perfectly obvious in considering this subject of large or postmature child, that we have entirely overlooked one of the commonest causes of dystocia. It is evident therefore, that the large child, whether mature or postmature, must be just as definite and just as serious a complication of labor as the generally contracted pelvis which it rivals for imperative preeminence.

---

*Read before the Ninth Councilor District Medical Society, Kearney, Neb., Sept. 12, 1922.

We have all heard the statement and most of us perhaps are guilty of making it "There is no such thing as a postmature child." However, with smouldering doubt comes the desire for investigation. Permit us therefore, to interrogate or introspect. What is the factor influencing prolonged gestation? The ultimate answer is that we have miscalculated or our data perverted through ignorance, or listlessness of the mother. Then we are compelled to ask further: But why then is the babe so large and why does it look so old? Is the uterus an organ of rigorous or peremptory function like the heart, or is it subject like the intestine to many anomalous interferences which retard or accelerate its activities? What is maturity and postmaturity? These problems prey upon the mind of the obstetrician for solution.

Tentatively we shall define maturity as that stage or degree of development which permits the fetus to surmount easily the perils and aggressions of an extrauterine existence. We all agree that a mature fetus must show the earmarks of a certain physical endowment as evidenced by the length and size of the body as well as the head dimensions. Without usurping valuable time and dwelling tediously upon the various authorities accessible to you, we shall set forth the almost unanimous opinion that the mature babe must measure from 48 to 53 cm. in length, weigh from five to nine pounds, and measure from 8.5 to 10 cm. in the biparietal, and from 10 to 12 cm. in the occipitofrontal diameters of the head.

The term "postmature" is prominent by its absence in our literature. Why does it not deserve a place in the category of obstetric terms as well as the converse term "premature?" Therfore, it seems quite conclusive that we must apply this term "postmature" to any babe which exceeds the maximum limits of measurement just given.

Consequently the postmature child is a large child, but it is a child which has attained its overgrowth and proportions through detention in the uterus after it has become mature.

If we admit these definitions we are forced to accept the principle that a postmature child is a pathological entity as it pertains to pregnancy and labor.

It is a point of common knowledge that large babies predominate. Most all of us point with pride to the "twelve or thirteen pounder" that is heralded by the local press, and is a pride and joy to fond parents. Perhaps the majority of these babes are weighed on balances procured from the Woolworth hardware counter. But seriously speaking, we all do meet with these large babies and all of us know the tedious and prolonged labors that these same babies exact and the ultimate strain on the fortitude and physical endurance of the mothers. We all recall unhappy experiences with overdistended uteri, pains weak and slow, or, if strong, where the membranes rupture prematurely, and we face a dry labor. None of us is compelled to search long in obstetric experience for memories of a firm head that did not readily mould or engage, and when hours later finally forced through the brim, the soft parts were overwhelmed and the ultimate delivery whether spontaneous, or in many cases instrumental, was accompanied by unhappy trauma.

Fistulae from the pressure of the large nonmoulding slow moving head are not uncommon, and maternal fatality must be expected out of the long labor, either from infection, hemorrhage, or the extensive and violent instrumentation. Along with this, we are forced to acknowledge the gravity of prognosis for the child, through relative shrinkage of blood supply, by strangulation at the vulva or by prolonged cerebral compression. Asphyxia, intracranial hemorrhages, skull fractures and paralyses, are always near, while craniotomy and evisceration on a dead child may chagrin the obstetrician.

These unhappy possibilities do not revert so much to the mere physical weight of the fetus as upon that inordinate volume in which we are all inclined to take pride and credit. It is this bulk which retards progress. It is the firmness of the postmature head which prevents moulding and delays engagement. It is the greatness of the mass which overdistends the parturient passage and compels the maternal morbidity and fetal fatality.

And what purpose does all this betoken? The mistaken ideas of a better inheritance for a more favorable entry upon life are all in error. The extra weight in all these large babes is rapidly lost. A child of nine or more pounds will lose from one to three of those pounds in its first three days postpartum, while a seven and a half pound babe will lose regularly about nine ounces, and rarely more than fourteen in the same period. This therefore, leads us to deduce that the oversized or rather overgrown child at the very first opportunity squeezes out the fluid and fat cells which have been stored up intrauterine. Maturity comes to the child in utero just as it comes to the adult and during a long drawn out uterine life the nutritional impulse exceeds the expenditure, and in consequence the tissues are distended with fat and fluid which serve only to clog the organs, impede the vital fuctions and jeopardize the delivery. As soon however, as the child is born the conditions of postmaturity no longer fetter the physiology. The tissues relieve themselves of their unnatural burden and return to normal. The child cures itself of its excessive obesity and a typical healthy existence begins.

It is our very earnest desire to set forth in this paper that all babes of nine pounds or more are not postmature, by any means, but it is well to recall that according to Von Winckel, three-fourths (74.8%) of these heavy babies have passed the estimated dates of their individual maturity. Such a date, of course, may not coincide with the date estimated for their confinement for some babes mature early and others late. The factors of fetal nutrition are extremely important in this connection as well as the potentials of heredity and in many cases the unexplainable cases of prolonged pregnancy. Whatever the cause, the man who regularily measures his babies will often observe one which is more mature at the eighth month than another at the ninth or tenth. The whole of our knowledge, however, comes finally to this, that the human female requires about 275 days for gestation with an upper and lower limit of 321 and 268 days respectively. This irregularity doubtless provides an ample latitude for the acquisition of maturity in a majority of babes, but it also produces a definite percentage which go over time. Parvin thinks this number will reach six or eight per cent. That is to say that, pregnancy is prolonged and the fetus becomes postmature once in fourteen cases. Whether the onset of labor is inaugurated by accident, or through the influence of the placental principle, or in consequence of impulses from the endocrine glands, we do not know. We do know, however, that the event, when left to nature is a matter of extreme uncertainty. The frequent imprisonment of the living fetus, or the long retention of a lithopedion in some instances as well as the occasional occurrence of premature labor, all indicate that muscular irritability is a factor, but also that the uterus has a tendency to functionate just as readily by caprice as by card.

Admitting the presence of postmaturity and its existence, and its possible perils, what are we to do regarding it? Can we determine the presence of maturity or postmaturity and should our inference, if indicated, be prophylactic or decisive, expectant or resolute?

To be sure, the line which we have set between what is generally accepted as normal, and what we have assumed to be pathological is purely arbitrary, but possibly if we assimilate a few of our reasons, we may be able to establish a plausible proposition.

We believe, without fear of contradiction, that a good horticulturist estimates the degree of ripeness of his fruit by its size and condition, rather than by the time it has hung suspended by the parent stem. Does it seem irrational to determine the maturity of the human fruit by the same unequivocal test? But can we do this? Have we any reliable methods of measurement and definite standards of comparison?

Maturity of the fetus is represented by certain physical criteria which, when present, indicate that the purpose of gestation has been fulfilled. These beacons, as we have stated, are the length, the weight, and the fetal head diameters.

We are all perfectly familiar with the pros and cons of measuring the pelvis and determining its caliber. On the other hand, we have been lax or have considered it an impossible feat to measure the babe in utero. In other words, we have journeyed to the firing line with a rifle of indefinite caliber and with it a heterogeneous assortment of cartridges of no certain or ascertainable dimensions. They might fit or they might not. If they did, the problem was solved to the gratification of the parents, but if they did not fit, the resulting disaster was accepted as the act of God.

It is now possible to determine with extraordinary accuracy the size of the projectile which is to pass a maternal canal of any appreciable size. In fact, we can measure the length and the size of the child and the diameters of the head with more certainty than we can measure the dimensions of the pelvis. It follows therefore, that a definite diagnosis of fetal maturity can be definitely assured, and this knowledge can be used under all circumstances as a safer and more reliable basis for the estimation of the proper date of confinement than the irresponsible menstrual history or a carefully observed date of quickening. The diagnosis will rest upon measurements made by the McDonald, the Perret and the Ahlfeld methods, all of which are easily learned, readily practiced and highly dependable. Furthermore, these procedures are a delightful and highly scientific adjunct to our art, for when the final measurements are made and recorded on the day of confinement we have only to await the termination of the case to verify the correctness of our technique.

The length of the babe is determined by the Ahlfeld method, which has long been known, but rarely practiced as a routine. One tip of the pelvimiter is placed upon the upper pole of the child and the other upon the upper border of the symphysis inside the vulvar slit, which is uplifted to the height of the border sought. From the reading thus obtained we deduct 2 cm. to allow for the thickness of the abdominal wall and multiply the result by two. This is the length of the child.

In our experience the postpartum figures tally exactly with the antepartum estimate in 34.5%. The variation was 0.5 cm. in 25.5% and less than 1.5 cm. in 31%. Thus in 91% of our cases the error was inconsiderable.

The size of the uterus in reality designates and sets forth the size of the child. By Spiegelburg's figures the fundus must extend 34. cm. above the symphysis when the babe is mature. McDonald found that a mature fetus required a uterus whose fundus would extend 35 cm. above the upper border of the symphysis. McDonald's measurement is made with a tape from the upper border of the symphysis along the convexity of the abdomen to a point even with, but not extending down into the depression above the fundus.

The child grows at the rate of 0.75 cm. in length and ¾ pound in weight per week as an average, so it is easy to figure by this method not only the maturity of the child, but the proper date of confinement. We found this procedure to be extremely reliable. McDonald also uses this means to determine the month of the pregnancy. He divides the height of the fundus obtained as above in cms. by 3.5 and the result is the month and its fraction of the gestation.

The problem of the fetal head diameters is one of absorbing interest. Only two, of course, are possible, the occipitofrontal and the biparietal, but fortunately these are the ones most needed. They are obtained by the Perret method. Thus the occipitofrontal is measured as it lies more or less transversely across the inlet without making any allowance for thickness of the abdominal walls. From this result the biparietal is estimated by a system of deductions according to a scale suggested by Perret and elaborated by McDonald. If the occipitofrontal measures 12 cm. for instance, 2.5 cm. is deducted to get the biparietal. From 11.5 cm. occipitofrontal we take 2.25 cm. from 11.25 cm. we take 2 cm. and from 10. to 11. cm. we take 1.5 cm. to get the biparietal.

In our series the postpartum measurement of the occipitofrontal tallied exactly with the antepartum estimate in 46%. The variation was 0.25 cm. or less in 32% and within 0.5 cm. in 22% and erred by 1 cm. in but 2% of the cases.

The biparietals obtained from the above occipitofrontals were found postpartum to be exact in 36%, within 0.25 cm. in 31.7%, within 0.5 cm. in 24%, and to vary by 1 cm. in but 6.5% of the cases.

It at once becomes obvious that the differences are too slight to affect the diagnosis to an untoward degree. The tests are notoriously erroneous, fallacious and unsatisfactory in cases of hydramnion, and extreme obesity, but on the other hand, twins and lightening can often be recognized when the tape is regularly employed.

The logic of our position demands that the pregnancy be watched carefully and the fetus measured at frequent intervals during the last weeks. If the maturity of the child is beyond question the pregnancy should not be allowed to continue indefinitely. The purpose of gestation is the production of a mature child and when this is accomplished the normal end of pregnancy is attained. The further retention of the fetus is no longer profitable and rarely permissible.

With a perfectly scientific and laudible method for determining maturity at hand, it now becomes our duty to interfere. It is true that the interruption of the pregnancy even at term, is a violation of our cherished traditions but admitting its sacrilegious aspect, we nevertheless maintain its legitimacy. We merely propose a new indication for the induction of labor, an indication based on painstaking observation and a high consideration for the welfare of the mother and child.

To those of our profession who are accustomed to stimulate a sluggish bowel, it will not seem inconsistent to inaugurate the contractions in a dilatory uterus and those who recognize the desirability of opening appendiceal abscesses, are already convinced that it is safer to guide and control the phenomena of nature than to await the haphazard and often misdirected operations of nature.

Such a management of a case requires more skill, more care and a deeper responsibility. But no man who realizes the gravity of the problem can be content to allow his reason to be thwarted and his patients endangered through the whims and caprices of an unintelligent hollow viscus.

And now we have presented the argumentative side of this question. We have attempted to show that there is such an obstetric pathological entity as the postmature child. We shall hesitate for a moment to view the simple therapy which will assist us to obviate those unhappy labors to which we have referred.

Technique: We wish to preface this section of the discussion by stating that it is always our routine in cases that we have found indication for induction, to give the night before castor oil ozs. 1, and quinine sulphate grs. v, the latter in three doses over a three hour interval. It has been our experience in the series that this produced labor in two cases out of five, and most reliably when the patient is a little bit past the calculated date. In event of failure to induce labor by this method we have cleansed the patient's bowels and have her prepared for her labor the next day.

The patient should have a careful obstetric preparation. Briefly, shave thoroughly the perineum, labia, and symphysis. Scrub with sterile cotton pledgets and lysol solution 0.5%. Scrub abdomen, legs and vulva in order named, taking ten minutes. Scrub down and not up. Then follow with green soap and sterile water. Rinse with sterile water. Cover with sterile towel. Drape as for any surgical or obstetrical procedure.

Assemble and sterilize by boiling for twenty minutes a Voorhees bag number 4, a Simon speculum or vaginal retractor, a pair of long Pean forceps, 2 pairs of vulsellum forceps, two tube compressors, 2 compression forceps, a Goodell dilator and a large metal syringe for filling bag. The bag and accessory apparatus must be tested for defects before using. Place a basin containing sterile water to which a small quantity of methylene blue has been added, accessible to the operator.

The patient, prepared as for delivery, is placed upon the table in an exaggerated lithotomy position with legs held by assistants or by stirrups. The vagina is retracted, a smear made from the cervix and the mucous membrane wiped clean with lysol pledgets. Anesthesia is only occasionally necessary even in primiparae.

One lip of the cervix is seized by the vulsellum and carried down. If the bag has been properly prepared the os will admit it ordinarily without dilatation.

The bag must be emptied of residual air, and the flat end pulled out. It is next rolled into a compact mass like a cigarette and seized by the Pean forceps so that the tips extend just to the large diameter of the rolled bag. After anointing the bag with sterile glycerine the bag is passed into the cervix with the concavity of the forceps turned toward the patient's left leg and as it enters the os the concavity is turned upward one quarter of a circle or ninety degrees so that when the maneuver is completed the curve of the instrument conforms to the flexure of the uterus. Release the lock of the introducing forceps, connect the tube of the bag with the filling apparatus and force the sterile solution (sterile water and methylene blue) slowly into the bag. Do not overfill by force or the bag will burst. Tension in the tube of the bag or the feeling of resistance to the injection are signs of fullness to the experienced operator. If uncertain of the technique a measured amount of fluid may be used. A piston syringe of tested size will also serve to inform the operator when the capacity of the bag (six ounces) has been reached. The Pean forceps are removed as soon as the bag is sufficiently filled to keep it from slipping out. Snap the compression forceps on the tube. Remove the vulsellum from the cervix and disconnect the syringe. Apply the tube clamps distal to the compression forceps, looping the tube between the jaws of the clamp to furnish a suitable method for applying subsequent traction. Remove the compression forceps, place two sterile pads on the vulva, one on either side of the tube. Remove the stirrups and pull the patient up in bed. The bag may break from overfilling or being insufficiently filled, may slip out of the cervix before the uterine contractions begin. If so, another bag should be inserted.

If the pains do not start within an hour, a weight of one or two pounds is attached by a tape to the loop of tube distal to the compression clamp, and passed over the foot of the bed. Usually in from five minutes to a half hour the contractions begin and the labor is under way.

In a variable period, rarely more than four hours (three hours and twenty minutes in our series) the bag is expelled by strong pains, the dilatation is practically complete and the head follows the bag down into the pelvis, the membranes rupture and the second stage begins. From now on the case is managed according to general obstetric principles. · The tedious exhausting and painful first stage has been definitely shortened. The bag acts as a mechanical aid to cervical dilatation, a dynamic stimulant to the contractions and it preserves the membranes from the injurious pressure until physiological rupture occurs.

When the membranes have been accidentally ruptured by the insertion of the bag no attempt should be made to pull on it to mark advancement lest it come out and by suction bring down the cord. When the bag comes out after accidental rupture of the membranes at the time of insertion it is good practice to make an internal examination to discover the presence or absence of a prolapsed cord. We assume, however, that it is understood that the fetal heart tones will be observed very critically immediately subsequent to and for at least a half hour following the successful insertion and inflation of the bag. Any tendency toward a significant change in rate should arrest our attention and cause an exhaustive search for the cause.

In a series of two hundred cases hitherto reported we had multiparae 114 and primiparae 86. The average duration of labor was seven hours and fifty-six minutes. The longest labor was thirty hours and was due to a tough inelastic cervix. Two others were in labor twenty-eight hours from cervical conditions. In one the cervix was a mass of cicatrical tissue. The shortest labor in a multipara was fifty-five minutes and in a primipara sixty minutes. The bag broke while being filled or shortly after insertion nine times. Another bag was introduced four times. The membranes were ruptured by the insertion of the bag seven times—in one case intentionally for hydramnios. The bag was expelled in an average period of three hours and twenty minutes. The longest retention was nine hours. The shortest was ten minutes. Two mothers died. One had myocarditis associated with a marginal placenta previa. Her labor lasted only one hour and a half, and was accompanied by only a normal amount of hemorrhage. Death came two hours after the delivery. The other had pneumonia and died eight days after labor.

In no case did the bag fail to inaugurate contractions or the woman to deliver.

The average weight of the babes was seven and four-tenths pounds. The smallest weighed five pounds and the largest ten pounds.

Twelve babies died.

One child of a primipara born in asphyxia after sixteen and one-half hours of labor was revived with difficulty and died three hours later.

One child of a multipara born blue after a labor lasting one and one-half hours. Revived. Died suddenly thirty-six hours later.

Two died on second and fourth days respectively from hemophilia.

One died of toxemia on the seventh day.

One child of a primipara with small pelvis. The delivery was instrumental and the babe died two hours after birth.

One died after forceps delivery, the occiput being posterior.

Two were still born. One died in the

course of a rapidly progressing second stage half an hour after the heart tones had been strongly evident. The other with heart tones diminishing was delivered by forceps but could not be revived.

Two died from compression of a prolapsed cord. One of these was luetic.

Operations—Version and extraction were done four times for placenta previa, transverse presentation, prolapsed cord, and to expedite labor in a heart case.

Forceps were used thirty-nine times,—occiptoposterior position, eleven times; deep, transverse arrest, fifteen times; insufficiency of the powers, four times; to hasten labor, five times; for instruction, four times.

There were two cases of prolapsed cord.

Our employment of the forceps may seem excessive to those who are guided by the statistics from large clinics wherein the women delivered are mostly normal and of strong physique. It does not seem improbable, however, that those of our colleagues who have much to do with our overcivilized American women will find in his private practice a larger percentage of forceps cases than in his clinical work.

Three of our cases developed elevation of temperature; one was due to pneumonia, one to tuberculosis, and one to mastitis.

No dilatation previous to the introduction of the bag was required in any case. In only five cases was chloroform employed for bag insertion, and then more on account of nervousness than for pain.

Certain objections have been urged against the use of the bag for the induction of labor. The most persistent of these is the danger of infection. In the early cases this fear was constantly before us and cultures and smears were made from the cervix in every instance. Streptococci, staphylococci, gonococci and the bacillus coli were found, but the induction went on and we had no postpartum infections. This result was quite puzzling until it occurred to us that the comparative shortness of the labors might be a factor in conserving the patients' immunity. It is our belief that prolonged labors, though nonoperative, are more disintegrating to the morale and more disastrous physically than extremely painful deliveries that are soon terminated. This opinion might be stretched enough possibly to cover the operative deliveries in which the trauma is not excessive.

It has been charged also that the introduction of the bag may disturb the presenting part and cause malpositions. This menace, which always hung over us in the earlier days when the Carl Braun bag was commonly employed and even later with the huge de Ribes affair, does not seem to be much in evidence at present when the small flat topped fabric bag is used. A further insurance against the accident inheres in the self control of the operator who contents himself with leaving the bag in the cervix where it belongs in place of trying to carry it to the fundus. So while admitting its possible or occasional occurrence as Broadhead has also noted, yet we must regard the dislocation of the presenting part as extraordinarily rare. Moreover, if the head should be lifted by the introduction of the bag it would soon resume its original position when the bag descended.

Whether a disturbance of the head favors a prolapse of the cord is still uncertain. Lynch maintains that a long cord is prerequisite to prolapse. If it happened therefore, that a long cord should coexist with a disturbance of the presenting vertex, we must assume that the mechanical conditions are present which would permit a prolapse of the cord.

It has been charged further that the bag is unreliable and that in many instances the pains cease after the bag is expelled and the induction fails. Although we have not had this experience in our cases, Lynch reports eight cases, Mosher six, and Boys one case.

We must accept this, therefore, as an infrequent but possible event in the hands of unimpeachable technicians. However, the bag is an unintelligent instrument and it can not be left to its own devices if good results are secured. It may break or come out; it may leak or fail to advance and so the bag should be watched assiduously from the moment of its insertion. Occasionally it may be desirable to swing the bag to one side or release it from the weight to enable it to shift its points of pressure. When the pains are slow in starting it sometimes happens that a gentle massage of the uterus for a half hour or so will aid in bringing on or strengthening the contractions. The most common cause of failure is found in the cases in which the operator has introduced the bag and then has left the case with no one at all or only an inexperienced technician in charge.

"Meddlesome midwifery" is an illiterative imputation that is loosely and almost instinctively made against the induction of labor by those who congenially wear the trammels of tradition. Wright of Toronto answers this charge quite clearly. "If", he says, "We can perform the operation in such a way that it causes no danger, or at least very much less danger to the patient than the prolongation of the pregnancy involves, then we must conclude that such interference is not only justifiable but advisable."

In conclusion it seems to us that the modified de Ribes bag is a safe and efficient agent for the induction of labor and when properly used is open to but few objections. Furthermore our experience justifies us in stating that not only is no harm done, but, in our opinion, much possible danger is averted by inducing labor when the child is mature. By this judiciously timed procedure the contractions of labor may be inaugurated when the child is ripe but still small enough to pass the pelvic canal without extreme difficulty. The mother is spared from four to six hours of suffering as well as serious operative trauma, and she rises from her confinement quickly and with unimpaired vitality.

A minor feature, but one not altogether unimportant, is the knowledge that the gestation will terminate on a definite date. This is both a mental and financial relief to the patient and a marked convenience to the doctor. Neither he nor the patient is taken unawares. There is no mad rush to the hospital, but with the same equanimity and confidence that attend any other non-accidental surgical affair the contractions are started in the morning, the labor advances smoothly and happily for mother and babe and terminates usually in the afternoon or evening.

Under such conditions of election it is easily possible for the physician and his skilled assistant to give the patient the time and attention which all labors require and relatively few receive.

Medical thought is tending ideally toward prophylaxis. We strive to foresee and prevent pathology rather than await its onset. This is proven prolepsis.

We believe that by the simple and easily applied tests which we discussed in this paper fetal maturity in utero may be diagnosed definitely and unmistakably. We believe that the induction of labor by the methods described is a safe and advantageous procedure. We believe that by combining these measures the uncertain arrival of a large or postmature child will become as it should, an exceedingly rare occurrence and that it will happen only as an inadvertence or from a system of temporizing which, not unjustly, would be looked upon with dismay in other branches of surgery.

Such management of a case requires more skill, more care and a higher responsibility. But no man who realizes the gravity of the problem can be content to allow his reason to be thwarted and his patients endangered through the whims and caprices of an unintelligent hollow viscus.

DISCUSSION.

E. E. Farnsworth, M. D., Grand Island, Neb.: I am decidedly interested in this matter, being somewhat active in the practice of obstetrics. I wish to confess my guilt in that I have carelessly watched the development of the foetus, and have given all my attention to the maternal physical condition. It has been only of recent years that I have made it my invariable and most profitable practice of carefully taking the history, making physical examination of the mother, and watching at frequent periods, her blood pressure, urine and general development.

Outside of watching the foetal positions and foetal heart sounds, I have. and I believe all the rest of us have followed the principle of watchful waiting, and taking the chance that the overdue, or postmature child could be delivered successfully when labor started spontaneously.

There is no doubt in my mind that postmaturity is one of the most common causes of dystocia, as has been brought out in the paper today. I was taught by Williams in 1910 that "we possess no satisfactory means of determining the size of a child, and particularly of its head. The diagnosis of excessive development, is, as a rule, not established until after fruitless attempts of delivery have been made." Edgar tells us that there is no standard of oversize. He states, however, that a child weighing from thirteen to sixteen pounds would be a fair representative of an oversized babe.

The purpose of induction of labor at term, or at maturity. which the doctor defines—"that stage which permits the foetus to easily maintain an extrauterine existence," is, as I take it, to prevent many dangers of dystocia to both mother and babe.

If we general practitioners and obstetricians can employ the methods of measurement satisfactory as made by McDonald, Perrot and Ahlfeld, and determine when we really have, or are about to have a postmature foetus, we can no doubt practice obstetrics safely and more easily.

I should like to emphasize the importance of watching the maternal and foetal developments more closely, and to employ dietary methods to keep down the size of the foetus, especially the proportions to the maternal pelvic measurements.

The technique of interrupting pregnancy at full term, as outlined in this paper sounds reasonable and not over-difficult. It would seem to me that hospitalization of the patient and excellent nursing, are absolutely indicated. The employment of this technique should be applied to well selected cases.

In conclusion, I wish to say that I believe there is an excellent field for the trained pathologic obstetrician. I agree with Dr. Arrasmith that postmaturity is a pathologic condition. I believe that this subject should warrant our closest observation. I have thoroughly enjoyed and profited by the scientific, yet practical principles of this neglected part of obstetrics.

THE TYPE OF DIET AS AN ETIOLOGIC FACTOR IN DIABETES MELLITUS.

J. E. Meyer, M. D., Columbus. Neb.

The importance of diet as an etiologic factor in diabetes mellitus has been emphasized by Joslin(1). It is his contention that obesity is produced by continued overeating together with lack of exercise; and he has shown statistically(2) that obesity predisposes to diabetes mellitus. That the diet is an etiologic factor in every case of diabetes mellitus would be difficult to prove, and especially is this true in those cases in which there exists some organic lesion of a gland, or glands, of internal secretion controlling carbohydrate metabolism. Most workers agree that carbohydrate metabolism is controlled chiefly by the pancreas, or more properly by the islets of Langerhans(3), and if this view is accepted, every case of diabetes mellitus signifies a disturbance in structure or function of the pancreas. From the results of autopsy findings it must be felt that many, probably a majority, of the vast number of cases of diabetes mellitus are at least primarily functional disturbances of the pancreas. The cause of a great, and often sudden, reduction in the functional capacity of an organ concerning which not too much is known, is not easy of explanation. Possibly the factor of overwork may enter, either as a sudden strain, causing a complete breakdown or as a constant strain causing a gradual lessening of the organ's capacity to do its work.

It appears to the writer that the factor of diet, more particularly the type of diet, has not been duly emphasized. Many of the so-called predisposing causes of diabetes mellitus might readily be dietetic factors. For example, no predisposing cause is more strongly or more universally accepted than the racial(4). The percentage morbidity is notably high in the Hebrew, and the Hebrew is known to be a heavy eater of carbohydrate and protein food. It has been shown by Woodyatt(5) that 58% of ingested protein is converted into carbohydrate before it is utilized; therefore, is it evident that a very excessive amount of protein in the diet might be as much a factor as too much carbohydrate. Endogenous protein is probably changed to carbohydrate only when the supply of glucose and glycogen has been exhausted; but 58% of the exogenous protein is probably changed to carbohydrate, despite the presence of an excessive supply of carbohydrate food. Many cases of hereditary or familial diabetes may be explained on the same basis. As Joslin(6) has pointed out, one large eater in a household is likely to make for another; and it is only natural to assume that the type of diet of the parents will, in the vast majority of cases, be the type of diet of the children. The occurrence of diabetes in a wife following the known existence in a husband or vice versa, upon which evidence was formerly based the claim that the disease might be of infectious origin, is more rationally explained upon the basis of dietetic environment. To be sure there is the occasional case of diabetes occurring in the infant in which it might be difficult to fasten any of the blame upon the diet, but no reference has been found to a study ever having been made upon the breast milk or other food taken by diabetic infants, just prior to the onset of the disease. Though diabetes is an infrequent disease during infancy, transient glycosuria is more common than during any other period of life(7). This may be attributed to instability of the carbohydrate mechanism but might also be due to variations in the sugar, protein, and fat content of the mother's milk or other nourishment taken by the infant. The age incidence for the onset of diabetes is much the same as that of other chronic metabolic affections and sclerotic diseases of the viscera, for it is during the fifth and sixth decades that the various organs of the body feel the accumulated sins committed against them during the previous forty or fifty years.

The case reported below has made me feel that possibly not so much the amount of food, but rather the character of food taken over a long period of time might be an important etiologic factor in diabetes. It is true that a normal individual can be fed a large amount of carbohydrate, up to 500 grams(8), without causing glycosuria or any other derangement in the carbohydrate metabolism, but in such an experiment the subject is immediately put back on a regular diet. It is believed that such a high carbohydrate diet continued over a long time would show different results. The so-called "carbohydrate debauch" has often been noted preceding the onset of "acute diabetes" and it would seem that an improperly balanced diet (top heavy with carbohydrate and protein), taken over a long period of time, might precede chronic diabetes. When diabetes mellitus has its onset during the course of some other disease, the assumption is, that the diabetes is due to invasion of the pancreas by the disease process. This is possible, but as a rule in such cases, dietetic regulation has been instituted and this very change in the patient's diet may play no inconsiderable part in precipitating the diabetes.

The following case is of interest because the diet for a considerable time before the onset of the diabetes, as well as the date of onset of the disease, as evidenced by the appearance of glycosuria, is fairly definitely known.

Case History: B. H. The patient is a white boy, aged 14, with no history of diabetes mellitus in the family. He had measles and pertussis before the age of five. Parents state that the boy was not ill at all for four or five years preceding the onset of the present illness. Present Illness: Four years ago, following overeating on July fourth he had what was thought to be an acute diarrhea, but did not respond to home remedies and was taken to the family physician. After several weeks his condition improved but when the medicine was stopped the diarrhea started again. He was taken to another physician and the same thing occurred. During the past four years he has been treated by five physicians and has never been free of diarrhea longer than two weeks. He has had some dietetic restriction but this varied with the physician and was never maintained over a long period of time. The mother states that the boy has not been very strong for the past two years but he has not been confined to bed. His appetite is good. The stools are described as brown, usually liquid, never entirely formed and often containing mucus, never containing blood and never black in color. He passes a moderate amount of gas. It has never been noticed that the bowels move more frequently after eating any particular type of food. Bowel movements vary in number from about six to ten a day and from two to four at night. Occasionally they are much more frequent. He has never seen any parasites in the stool. There has never been any nausea or vomiting but there is a distinct sense of fulness and distress after each meal. There is no warning before the bowels move now, although up until two months ago there was always some warning.

Physical Examination: He is a fairly well developed, pallid, rather undernourished boy. He weighs 81 pounds. Head and neck are negative. The heart and lungs are apparently normal. The abdomen is moderately distended, and as a rule there is very slight tenderness in the lower abdomen about the mid-line and in the left lower quadrant. There is no palpable mass. The liver is not enlarged. The spleen is not palpable. The tendon reflexes are normal. Pulse rate is 74, regular and of good quality. There is no adenopathy. On September 13, 1921 the patient was sent to the hospital for study. Stool examination showed occult blood constantly present; no free blood; mucus and undigested food present; no parasites or ova. X ray of gastrointestinal tract with barium meal and barium enemata showed no evidence of pathology except that there was a hyperperistalsis throughout the gastrointestinal tract. Proctoscopic examination showed the rectal mucous membrane injected but no evidence of ulceration. Sigmoidoscopic examination showed a similar condition in the sigmoid. The Wassermann reaction was negative. Blood examination: Rbc. 4200000, Hg. 68%, Wbc. 9200. Polys. 73%, Lymphos. 20%, Large monos. 3%, Eosinos 2%; Trans. 2%; Rbc. normal in character. The patient was put to bed on a diet consisting of boiled fat free milk and albumin water, containing 45-50 grams protein and totaling 400 calories. A colonic irrigation of silver nitrate one to forty thousand was used daily. After three days there was also used per rectum potass. chlorat. gr. 15, tr. opii. m. 15, tr. hyoscyam. m. 15 in one ounce starch solution; the feedings were gradually increased in quantity but not in character, the boiled fat free milk, albumin water regime being continued. There was constantly present in the urine a faint trace of albumin and occasionally hyaline casts. Occult blood and varying quantities of mucus were constantly present in the stools. On September 29, it was noted that the stools were becoming formed. Dextri maltose, grams 15, was added to diet. September 30, cream of wheat was added to diet. On October 1, it was found necessary to allow the boy to go home. A diet consisting of skimmed milk, with cane sugar and cream of wheat and albumin water to make a thousand calories was prescribed. The boy's condition was improved on discharge and his progress was regarded as satisfactory considering the duration of the condition. The stools were less frequent, three to five in twenty-four hours. He had lost five pounds. The diet was continued unchanged at home and likewise the irrigations of silver nitrate solution until October 10, when he was having two or three bowel movements in twenty-four hours, no distress after eating and a warning of five to ten minutes before the bowels moved. The abdomen was not distended. Weight was 78 pounds, a gain of two pounds. The stools were still positive for occult blood. The urine showed a faint trace of albumin and an occasional hyaline cast. Oatmeal, rice and one slice of toast per day were added to the diet. One week later he was having two bowel movements per day and none at night. He weighed 81½ pounds. It seemed at this time that the condition was gradually improving and that the chances for complete recovery were good. More carbohydrate and protein food was gradually added. The boy was seen again on November 10, when he was having as a rule, only one bowel movement every twenty-four hours, sometimes two. He weighed 86¼ pounds. On December 8 his bowels were moving only once a day, and never at night. He was feeling very much stronger, taking more exercise without fatigue and his general condition seemed to be entirely satisfactory. At this time the diet was 1300 to 1500 calories, with the new food added largely carbohydrate. A specimen of urine voided in the office and examined routinely without the slightest hint as to what it might possibly show, revealed the following: Specific gr. 1032, very faint trace of albumin, 4.6% sugar, no casts or red blood cells. After sugar had been found in the urine, the mother was again questioned and in response to leading questions she stated that for the past three or four days the boy had been drinking much more water than formerly. and had been voiding a larger quantity of urine. No increase in appetite had been noted. The parents' consent to leave the boy in the hospital could not be obtained at this time, but they agreed to bring him back for a short period of observation. During the time at home the parents were instructed to allow the boy whatever diet he desired. On December 13 the boy was readmitted to the hospital. His weight at this time was 89 pounds, a gain of 2½ pounds in the period of five days. He complained of excessive hunger. There was no diarrhea. His urine showed 2.9% sugar, 96 grams in 24 hours. After one day's preparation of fat free diet he was placed upon broth and tea. After being upon this diet twenty-four hours he complained of abdominal pain and headache. The abdominal pain was very sudden in onset and one-half hour after its appearance he vomited. A specimen of urine obtained at this time revealed the presence of a large amount of diacetic acid, a finding never previously noted. His breath had the sweetish odor of acetone. The pulse was mounting rapidly and the temperature rose to 102 degrees. The patient became very restless. This is the first instance that the writer has seen of serious acidosis appearing during starvation where there had been previous preparation of fat free diet. He was given salt solution subcutaneously and later glucose intravenously. After repeated gastric lavage, colonic irrigations. salt solution subcutaneously and carbohydrate by mouth, the patient reacted. He was fed orange juice and other carbohydrate food until the diacetic acid and actetone disappeared from the urine. The optimum diet had previously been computed according to the method of Woodyatt(9) but because of the recent attack of acidosis and previous diarrhea the fat content of the diet was placed lower than the computed amount. It was impossible to gain the consent of the parents to allow the boy to stay in the hospital for further study while on this diet and on December 22 he was allowed to go home. The boy was seen several times later when it was found that he was not following the diet and was steadily going down hill. Urine examinations by his family physician showed sugar constantly present. There was no diarrhea. He died on February 4. Although no report was obtained from his physician it would be concluded from the description of his final illness as given by the parents that he died during a typical attack of acidosis similar to the one he had while in the hospital.

Now, in this case the fat indigestion may have been an evidence of organic pancreatic disease, but this is doubtful because there was no other evidence of such disease. In fact, it is believed that the fat in his diet was less a factor in the original causation of the diarrhea than in causing it to persist. The diarrhea presented nothing in itself to differentiate it from the ordinary diarrhea associated with chronic catarrhal colitis and so often benefited by lowering or temporarily removing the fat content of the diet.

It is known that in the diabetic feeding an amount of food that will yield carbohydrate in excess of, or approaching, the patient's carbohydrate tolerance will in time cause that tolerance to be lowered; whereas, on the other hand, if the carbohydrate yield of the diet is maintained at such a point that no sugar is eliminated in the urine, and if the blood sugar is kept at the lowest point possible with a diet compatible with the carbohydrate fatty acid balance, carbohydrate tolerance is in some cases increased. Of course, the reaction of the diabetic and the non-diabetic individual to definite proportions of carbohydrate, fat, and protein is not the same; and yet if diabetes mellitus is regarded as a functional disease in which the "carbohydrate handling apparatus" is impaired, then it is not difficult to form an analogy between the diabetic, and the non-diabetic who is constantly ingesting food that will yield carbohydrate sufficient to approximate his tolerance. In this discussion little has been said of the part played by various organs in storing and assimilating carbohydrate or of the factor of error that is likely to enter into any calculation as a result of the food principles obtained from endogenous sources. But, however, the glycogenic and glycogenetic functions are ascribed to the various organs of the body. Whatever part is played by the hormones of the various glands of internal secretion in carbohydrate metabolism, and whatever part of the glucose eliminated in the urine or carried in the blood as an excess of blood sugar is of endogenous or exogenous origin. The main concern of the clinician is the result obtained when a definite amount of carbohydrate, fat, and protein is fed to the patient over a long period of time. The present most generally accepted method of treatment, the so-called starvation (Allen) treatment does not depend upon a low carbohydrate or even a low carbohydrate low protein diet, but upon a reduction in the body mass by a low calorie diet in order that all the functions of the pancreas may be relieved of overstrain(10). The outstanding weakness of the Allen method of treatment is that the patient's glucose tolerance gradually shrinks despite undernutrition, which means that the patient's condition is gradually becoming more serious. Many a diabetic has faithfully followed a low calorie diet in which the carbohydrate allowance approximated his tolerance, only to have that tolerance slowly but surely shrink, until finally the undernutrition has become so great that there remains to him only a helpless body and often a depraved mind. If this shrinkage in carbohydrate tolerance is due to a strain on the carbohydrate assimilating apparatus, the high fat diet, as advocated by Newburgh and Marsh(11) should be a distinct advance in the dietetic treatment of diabetes. Too much should not be expected of this or any other modification of the present methods of dietetic treatment until the results of treatment of a large series of cases, over a period of years, have been ascertained. It may be, as Blatherwick(12) has suggested, that the continued overstrain on the fat burning mechanism will cause a breakdown, or it may be, that there will be some other reaction to a dietary so vastly different from the normal one.

The absence of fat in the diet, in the case discussed, has not been mentioned as a possible etiologic factor because there does not seem to be any scientific justification for the belief that the presence of fat is essential to normal carbohydrate metabolism. It may be, however, that the presence of fat is just as essential to carbohydrate metabolism as carbohydrate is to proper fat metabolism. Possibly the fuel is just as important to the flame as the flame has been shown by Woodyatt to be to complete combustion of the fuel. It is known that carbohydrate is absolutely essential to proper fat metabolism but as long as it is not known why this is true it will remain difficult to deduce anything from this knowledge as to the necessity of the presence of fat for proper carbohydrate metabolism. Diabetes was formerly regarded as an almost unknown disease in the negro. Lately it has been found that it is a not at all uncommon condition in the negro of the city, but it still remains a rather rare disease in the rural negro of the South, whose diet is composed largely of salt pork, corn bread and fresh vegetables, a diet that certainly contains more fat, less protein, and probably less carbohydrate, than that of the average individual. Conclusions: It is difficult, and even hazardous, to make any deductions from a single case of diabetes; and yet the case presented seems to the author to give some evidence in favor of the belief that diabetes mellitus may be produced by the long continued ingestion of an improperly balanced diet; and that diabetes mellitus may sometimes be a functional disease produced by overwork of the mechanism of carbohydrate metabolism.

BIBLIOGRAPHY.

1. Joslin, E. P.—The Prevention of Diabetes Mellitus. Jour. Amer. Med. Assn., 76:79 (Jan. 8) 1921.

2. Joslin, E. P.—Today's Problem in Diabetes in Light of Nine Hundred and Thirty Fatal Cases. Jour. Amer. Med. Assn., 78:506 (May 20) 1921.

3. Barron, Moses—The Relation of the Islets of Langerhans to Diabetes. Surg., Gynec., and Obstet., xxxi:437 (Nov.) 1920.

4. Mitchell, J. W.—Clinical Indications of the Etiology of Diabetes. Med. Record, Vol. C:575 (Oct. 1) 1921.

5. Woodyatt, R. T.—Acidosis in Diabetes. Jour. Amer. Med. Assn., 1916.

6. Joslin, E. P.—Ibid., Jour. Amer. Med. Assn., 78:506.

7. Abt, I. A.—Diabetes in Infancy and Childhood. Endocrinology, iii:273 (July-Sept.) 1919.

8. Taylor and Hulton—Quoted by Knowlton, F. P., A Review of Carbohydrate Metabolism. N. Y. Med. Jour., (April 20) 1921, 591.

9. Woodyatt, R. T.—Objects and Method of Diet Adjustment in Diabetes. Arch. Int. Med., 28:125 (Aug.) 1921.

10. Allen, F. M.—Experimental Studies in Diabetes. Amer. Jour. Med. Sc., 161:16 (Jan.) 1921.

11. Newburgh, L. H. and Marsh, P. L.—Use of High Fat Diet in Treatment of Diabetes. Arch. Int.

12. Blatherwick, N. R.—Observations in Blood Fat in Diabetes. Jour. Biol. Chem., 49:201 (Nov.) Med., 26: 647, 1920; Arch. Int. Med., 27:699, 1921. 1921.

"The part that suggestions play in the welfare of human beings requires no defense. It is part of the daily armamentarium of every physician."

SOME CLINICAL PHASES OF DIABETES MELLITUS.*

Willis J. Raynor, M. D., Grand Island, Neb.

Twenty-five years ago Osler said of diabetes mellitus, "that it is a disorder of nutrition in which sugar accumulates in the blood and is excreted in the urine which is greatly increased." Ten years later Hare of Philadelphia said about the same thing, with the addition that the glucose in the urine must be accompanied by other morbid processes to complete the symptom complex of diabetes mellitus. So we come on down to the 1922 definition in Tice's Practice of Medicine that, "Diabetes Mellitus is a disease characterized by an excess of sugar in the blood, and by a constant output of glucose in the urine in a normal carbohydrate intake."

So all definitions are unsatisfactory in that they give no idea of the cause. That, of course, is impossible with our present knowledge. As it is said that seven of the largest research laboratories of this country are endeavoring to find the cause, no doubt we shall soon be able to complete the definition.

Diabetes was known in Christ's time,—but not until late in the seventeenth century was it noted that the taste of diabetic urine was sweet, and not until 1775 was sugar actually obtained from the urine by an English physician, and for many years thereafter the only practical test was by taste.

Diabetes appears among people of all nations. More cases appear among Caucasians than among the colored races, and more among certain classes of Caucasians than others, notably the Jews. As an instance, Kulz of Germany found that in 690 cases 17.8% were Jews, while the percentage of Jews was only 1.02% of the whole population of the country. Von Noorden found 252 Jews in 650 cases. Diabetes is really a disease of middle and past middle life. So when it attacks the young, as it often does, we find the cases very grave and usually of short duration. No cases recover from diabetes, nor is there any remedy for the cure of the disease. The disease may become stationary with little or no glycosuria for years, but invariably shows itself before the end of life. When we consider the processes of metabolism which takes the rough elements of the food and produces that wonderful finished product, the blood, for blood is only the digested fluidified food, we cease to doubt the abilities of nature. So with a continuous glycosuria on a normal carbohydrate intake, it would seem easy to eliminate the glucose by cutting off the carbohydrate; but as 58 per cent of protein, by weight, is capable of being converted into sugar, the problem becomes complicated and intricate, for the patient must have a diet providing at least 1500 to 2000 calories in order to maintain nutrition and activity. So after the patient is rendered sugar free, the greatest possible amount of proteid, plus the carbohydrate, plus the fats, that can be taken without the overflow of sugar, should be ascertained and maintained. Then only do they feel their best.

It is said that there are one hundred thousand diabetics in the U. S. all the time. This represents only a portion of the cases, for many go on for years unknown, and are only recognized during the course of acute infections, or in examinations for other conditions. There is a trinity of symptoms in diabetes, which are glycosuria, polyuria and thirst. If the case is of considerable duration, either or both of the two latter may be absent, but can most always be brought out in close questioned history taking. There are more complications in diabetes than in almost any other disease: Complications on the part of the skin, heart and blood vessels, gastrointestinal tract, kidneys, lungs, nervous system and special senses. Some of these are so constant that one wonders why they should not be classed as primary symptoms, such as the myalgia and neuritis. All complain of muscular pains and fatigue; many beginning the day with it. Very many have neuritis, nearly always involving the same parts. One physician in Omaha, himself a diabetic, informed me that he always regarded the pain in his left knee as an index of increased sugar content and lessened nutrition. Another individual, with whom I am most intimately associated, has an intense lancinating pain in the second joint of his right index finger, following every diet indiscretion.

---

*Read before the Hall Co., Medical Society, Grand Island, Dec. 1, 1922.

As illustrating the above, I quote from the history of an ordinary case as it appeared in my practice. Mrs. M. A. consulted me on March 20th, 1922, for the relief of rheumatism in her left shoulder and pruritis of the genitals. She is 58 years old, weighs 170 lbs., occupation housewife, apparently well nourished, mother of three grown children; has always had good health. did have three or four boils two years ago; has had the pain in her shoulder off and on for about a year, (almost continuous for the past two months); the pruritis has been bad for the past six months, local treatment having no effect. She voids her urine two or three times each night and thinks she passes too much; physical examination is negative, excepting as stated. A decided, sweet cider odor is noticeable on her breath. On March 22nd, she reported with sample of 24 hour urine; the quantity was 4700 cc.; sp. gr. 1038, very acid; no albumin reaction for sugar, very strong. Later quantitive test showed 3.30% sugar. The fats and proteid were eliminated from her diet. The carbohydrates were halved each day until on the evening of the 25th, she was put on the Allen starvation regime. On the afternoon of the 29th, the urine showed quantity reduced one-half; sp. gr. 1026, acid reaction, no albumin, no sugar. She was put on a diet of the 5% green vegetables with clear broth, containing 60 calories in all. This was increased each day until on the twentieth day her diet contained 2200 calories, which included 8 soda crackers of 5 grams each. She has no pain of neuritis. The pruritis has entirely disappeared. At the present time she feels good does her own work and is able to help care for her sick neighbors.

Some of the older writers assert that as high as 42% of diabetics have albumen in the urine. In my own cases, this percentage is entirely too high. All cases do very well when treated as diabetics only; with one exception, that of a man 66 years old. I was able to keep off acidosis acid uremia, but he died of malnutrition. The emaciation became very great. All diets were tried without avail. Under the older treatment, diabetics were prone to edema, hydrothorax, ascitis, fluid in the subcutaneous tissues, especially following the administration of quantities of sodium bicarbonate and sodium chloride, for it has been demonstrated that the retention of fluid is thus brought about. So when these remedies are withdrawn, the edema usually disappears. And per contra their administration will limit the polyuria and malaise with desiccation met with at some period in nearly all cases.

That phase of diabetes, late in the course of the disease, marked by perforating ulcer, carbuncle and gangrene is today rather rare in well treated cases. When this condition does appear, I know of no class of cases where there should be closer relationship than between the medical practitioner and the surgeon. The medical man should at once try to disintoxicate the patient. Failing in this, he should then, and only then, step aside to the surgeon. Some wonderful results have been accomplished in these cases by disintoxication. In cases of coma, the prognosis is more favorable in those not having been previously treated, than in those that have gone through a long course of treatment. The withdrawal of alcoholics from a patient, whose system is accustomed to the constant stimulus, renders it difficult to free him of glycosuria and still maintain his nutrition.

Joslin has well said the spectre of coma haunts the physician who treats a new case of diabetes. In cases that are of long standing and are progressive, the obese, and children, accompanied with severe complications, is this especially true.

Acidosis is said to be a condition of interference of the normal alkali reserve. The blood becomes less alkaline, which means an accumulation of acids within the body. When this condition presents itself, unless vigorous measures are taken, coma is not far ahead, and often, with all our watchfulness, it steps in as does the proverbial thief in the night. Acid bodies may have appeared in the urine for years, without producing any appreciable symptoms. Only when that increased degree of lack of oxidation of the acids is demonstrated, may we look for approaching coma. The symptoms are not numerous, nor are they prominent: Slight dulling of the mentality, slight puffiness of the eyelids, slight edema, dimness of sight, sweet cider odor of the breath and urine, nausea, vomiting, vertigo, drowsiness, deep breathing. The last I consider a very important symptom and is always present with the above symptom complex. The laboratory findings come in to verify the condition, and coma may be averted only by immediate vigorous treatment.

NOTES.

The English physicians are abandoning the alkaline treatment in coma. So far they have failed to substitute anything better.

Diabetics are notably temperamental; that is, quick tempered, irascible, even disagreeable. Forty years ago, James T. Whittaker said in his physiology lectures that "the fats were fried in the flame of the starch." A recent author has clothed this thought in other language, and passed it on without quotation marks.

Most cases of diabetes are progressive, the carbohydrate tolerance slowly lessening as time goes on. As a rule, the greater the polyuria, the higher the specific gravity and likewise the percentage of sugar.

Some cases with low specific gravity, 1008 to 1012, present a sugar content of ½ to 1⅓ per cent.

Well treated cases end by inanition or intercurrent disease, rather than by coma. Finally, I have no sympathy with the individual who goes about with glycosuria, who casts his diet list to the scrap heap, and flaunts the physician. For him there is trouble and misery in the making in the not far future. He may be likened to one who stands upon the rim of the crater of a volcano, the seething mass below awaiting the least misstep to engulf him into oblivion.

PEPTIC ULCER

J. M. Willis, M. D., McCook, Neb.

It was not until the surgeon opened the abdomen, and actually saw the pathologic condition in the form of peptic ulcer, that the present understanding of it was reached. Previous to this development of surgery, 96% of peptic ulcers were believed to be in the stomach. Now it is known only about 25% are so situated.

Ulcer was believed to be much more common in females than in males. Now we know the ratio is three in males to one in females. It was believed that patients with ulcer suffered pain immediately after eating. We now know temporary relief follows eating. It was believed hemorrhage was often a sign of peptic ulcer. We now know that it occurs in less than 25% of the cases. The greater number of sudden hemorrhages of the stomach, which are not preceded and followed by the ordinary symptoms of ulcer, are not caused by ulcer but by superficial follicular erosions of the gastric mucus membrane due to toxic hepatitis, the result of focal infection, often originating in the appendix, gallbladder, teeth, tonsils and so forth.

Balfour mentions a case in which bleeding ceased after removal of a chronically inflamed gallbladder. Deaver reports profuse bleeding in hemorrhagic infections of the biliary tract. Rankin reviewed the histories of 55 patients in the Mayo clinic, operated upon for ulcer, with blood in the vomitus, in the stool, or both, but in whom a pathologic condition was found in the gallbladder at operation.

Cases of cholecystitis in which there is occasional bleeding into the stomach or intestine should be grouped with the toxic cases of gastrointestinal bleeding. Undoubtedly the bleeding is due to the effect of toxins from the infected liver or gallbladder. It is well known how severe hemorrhages may be in deeply jaundiced patients. It is entirely possible that changes in the blood itself have taken place.

Many times the wrong diagnosis has been made through the error of thinking that if bleeding was associated with dyspepsia, there must be an ulcer in the stomach or duodenum. If blood was vomited the diagnosis seemed positive, but we now regard this symptom and blood in the stool as occurring in association with other conditions in a certain percent of cases.

Smithies has shown that 51% of ulcers of the duodenum and stomach have cholecystitis coincident. Many patients are treated for ulcer, perhaps repeatedly, and everybody is disappointed when somebody comes along and takes out a gallbladder full of stones, or removes a diseased appendix.

Moynihan's dictum that peptic ulcer may be diagnosed by correspondence leads one to believe that the diagnosis is always easy, but such is not the case. Hunt says that accurate surgical diagnosis of diseases of the abdomen will never be made until people are born with plate glass fronts, but that medical diagnoses are much more accurate as they are not proven.

It is stated by good authority that at least 5% of people suffer at some time from gastric or duodenal ulcer. Eighty-six percent of all peptic ulcers occur at the pylorus, or on the lesser curvature. This seems to me to be a very significant fact, and B. B. Davis, Graham, and others, believe that the reason they are so frequent in one part of the stomach, and so rare at the fundus, and the greater curvature, is due to infection originating in the lymphatics producing lymphatic stasis, edema and necrosis; quoting from Davis, "the lymphatics have not been given the consideration as disseminators of disease to which their importance entitles them. As spreaders of infection, and as channels along which cancer cells permeate to distant regions, they hold chief position."

Other investigators have shown that ulcers occur where the blood supply is naturally not so rich, viz., along the lesser curvature and the first inch of the duodenum. Rosenow injected streptococci isolated from gastric and duodenal ulcers in man into the veins of experimental animals and produced gastric and duodenal ulcer, and a total of ulcer and hemorrhage in 83% of the animals injected. He has later carried the same experiments further by planting the streptococci into a tooth, sealing the tooth tightly, and finding the ulcer due to the latter procedure to be more chronic and showing practically no tendency to heal.

Chronic infection about the teeth, pyorrhea, blind alveolar abscesses, chronically infected tonsils or sinuses in the head are invariably found in ulcer bearing patients. This fact may account for the seasonal exacerbations of peptic ulcer as the exacerbations come in the spring and fall when nose and throat and other streptococcal infections are particularly prevalent.

I believe gastric ulcers have the ever-present tendency to become malignant. Cancer of the duodenum is among the rarities, only five cases have been observed in the entire history of the Mayo Clinic. Cases of peptic ulcer have occasionally been reported following widely spread skin burns, also following trauma.

SYMPTOMS.

The clinical history is of enormous importance especially in duodenal ulcer if accurately and carefully taken. The patients will not come to you unless they are in distress. The history is of greater importance than the X ray examination unless the examining Roentgenologist has had considerable experience. If distress after taking food comes on immediately, it is rarely attributable to duodenal ulcer. If there is no obstruction present, or perigastritis, or other lesion to make it come earlier, it comes as a rule not much earlier than an hour and a half after eating. When it appears it is a continuous distress. It usually continues to the next meal to be relieved by eating. Often taking a cracker brings temporary relief. On taking a meal consisting of eggs, meat, or bread and butter, that is, a meal having a good deal of albumen in it, the distress attributable to ulcer will be temporarily relieved for an hour or two. Distress is also relieved by adequate alkali.

Sippy uses a test dose of alkali consisting of 30 grs. of calcined magnesia, and 30 grs. of soda. Distress unrelieved by this powder can very rarely be attributable to ulcer. In the past there has been very much uncertainty of the syndrome of gastric ulcer. Usually the onset of pain appears sooner after meals, is briefer in duration, disappearing before the next meal, or may cease temporarily to reappear during the interval. The pain of gastric ulcer is often eased by food though not so clearly or completely as duodenal ulcer. Fear of food pain is more often noted. Small amounts of food will give ease when larger amounts may provoke pain. Nausea, belching, and emesis are more likely to be present. In cases of uncomplicated gastric ulcer, careful diet seems to give more relief than in cases of duodenal ulcer. Exacerbations are apt to be more frequent, although shorter in duration and follow more easily on fatigue, exposure or dietary indiscretions.

The acute perforative ulcers can be recognized by the manifestly severe and grave symptoms. Their proper interpretation can be made much easier if a history of previous ulcer symptoms is obtained. However, even skillful clinicians and surgeons erroneously interpret the symptoms of peritonitis, and gravitation of fluids to the right fossa with local muscular rigidity as an acute perforative appendicitis, unless careful inquiry is made.

The so called "silent" or latent nature of ulcer is strikingly evident clinically and substantiated by disclosures of the operating room, postmortem, and X ray examination.

BIBLIOGRAPHY.

Mayo. W. J. Progress in the handling of Chronic Peptic Ulcer. Jr. A. M. A. July 1, 1922.

Davis, B. B. Cholecystitis, Its Influence on Upper Abdominal Pathology. Ill. Med. Jr. June 1922.

Eusterman, G. B. Gastric and Duodenal Ulcer. N. Y. State Med. Jr. Feb. 1917.

Carman, R. D. Errors in Roentgenological Diagnosis of Duodenal Ulcer. Jr. of Radiology May 1922.

THE INTERPRETATION OF FEVERS IN CHILDREN.*

John V. Reilly, M. D., Grand Island, Neb.

The study of fevers in children presents a situation somewhat analogous to Bret Harte's saying: "For ways that are dark and for tricks that are vain, the heathen Chinee is peculiar." For the outstanding factors of a study of fevers in children that claim our attention are lack of uniformity, confusion of facts as related to adult fevers, diverse manifestations and individualistic tendencies.

The symptom-fever is not only the first sign in the majority of cases to occupy a physician's attention, but is also the one that parents lay the most stress on and its importance is sometimes exaggerated. The mother inculcated with maternal intuition readily believes that owing to a lack of vital force in the child, the fever must be put down at once and, therefore, enters into an invasion on the child with laxatives or calls a physician to give some fever medicine.

The two types of fevers that draw most of our attention are—First: The abrupt fever without perceptible cause. The kind we find when a child has a high fever one hour and the next hour a normal temperature. This condition is found in the majority of cases to be due to intestinal fermentation or emotionalism. The second type is the continuous type with apparently an obscure pathology, the kind we find when the child has an intermittent, or remittent fever from day to day. This type is summed up as the type of bacterial invasion, and is the one that causes the most difficulty in diagnosis and many times enters into the defeat of the diagnostician.

It might be well, for the sake of comparative discussion, briefly to summarize the physiology of normal heat regulation and its variations in childhood. We know that heat in the body is formed by the negative, or katabolic side of metabolic process and rendered stable by uniformity in production and discharge. On the side of production we have relation to food intake, amount of muscular exercise and proportion of bulk to surface area. On the side of discharge, or loss, we have lung expiration in evaporating the water of respiration and skin evaporation. These conditions are regulated to a certain degree by afferent and efferent impulses sent from the thermogenic centre in the brain acting on the vasomotor nerves, secretory nerves of sweat glands and the trophic, or nutritional nerves. Granting this condensed version to be true in the adult, in infants and children we will find wide variations to the foregoing.

First: Unstable and undeveloped nerve mechanism, especially of the vasomotor system, with its unstable action on the skin areas. This, we find to be one of the chief factors in the production of fevers in children.

Second: Smallness and variation in food intake, especially the undernourished and faulty nourished in regard to fats, carbohydrates and proteins.

Third: Heat production hindered, owing to small surface area, the ratio being low and elimination being in direct proportion to surface area.

Fourth: Undeveloped special nerves of sweat glands.

Fifth: Small lung area with a decreased water of respiration evaporation.

Sixth: Small amount of muscular action, especially in infants, hindering production and elimination.

Of these variations one or more enters into question in the interpretation of fevers in children from infancy and throughout childhood and envelops the one prime factor to be considered in the production of fevers in children, that is to say, elimination. Elimination of heat in an adult is produced by developed vasomotor nerves, large surface area, well developed lungs, developed sweat glands and muscular activity. All these are found wanting in the small child and thus the equalization between production and loss are found faulty with the balance in favor of production. This brief summary of the mechanism of physiological heat variations is enough to start us on the road in fever diagnosis confusion. For the convenience of study let us enumerate the etiological causes that might enter into fever production. First: Hereditary taints, leaving the child with unstable systemic metabolism. Second: Unhygienic conditions, the harbor for disease. Third: Faulty feeding, excessive feeding, or inadequate feeding, begetting a metabolic disproportion. Fourth: Improper, over, or insufficient clothing, producing a lowered vitality. Fifth: Individualistic tendencies, or idiosyncracy to disease. Sixth: Seasonal disturbances. Seventh: Emotional parents.

---

*Read before the Hall County Medical Society, Grand Island, Sept. 1922.

In a study of (1) heredity, we are confronted with a defective systemic functioning of one or more of the organs of nutrition unbalancing the constitution. (2) Unhygienic surroundings, with lack of pure air and kindred conditions. (3) Feeding, with its gastro-intestinal defects. (4) Clothing, with its obstruction of systematic heat conduction, evaporation and elimination. (5) Individualistic tendencies, with its disregard for any particular disease. One child with a certain disease having a moderate temperature, another child with the same disease having an alarming high temperature. (6) Seasonal disturbances, with its tendencies to certain diseases. Spring and summer, with its gastro-intestinal conditions. Fall and winter, with its typhoid, tonsillitis, bronchitis, pneumonia and influenza. (7) Emotional parents, with a highly emotional child flaring up through instability of the nervous system without a definite cause.

In other words, fevers in children can be psychic or physical. Psychic in the sense that it may be an overactive brain or nervous irritation and physical begetting pathological changes.

Let me cite a few of the ailments which are the more difficult to diagnose. In infancy, our attention is called first to septic conditions traceable to the mother and showing itself especially in affections of the navel. This condition is one of the earliest fever conditions to confront us. Then there are inanition fevers due to lack of fluids, producing, occasionally, a very high fever, which has been shown to be not of the rarity ordinarily supposed. Advancing to the suckling period we come to one of the main causes of fever in infants, gastro-intestinal disturbances, the cause of which can easily be interpreted by a history of faulty feeding or an inspection of the bowel movements. During this period we may, and very often do, find otitic conditions, and they should be suspected especially when a child has a nasal cold, but many times, unless this possibility is kept in mind, an erroneous conclusion is drawn, that the cause is located elsewhere. This condition, otitis, whether external, internal, or media, with fever, brings out the fact often overlooked that in main the symptoms of a child are more often objective than subjective and unlike an adult cannot be easily expressed. From the eighth month to five years, or the period of dentition, we are confronted with a variety of diseases, gastrointestinal, urinary, respiratory, focal infections and the exanthemata. Under the heading of gastrointestinal we might include influenza of this type. This is one of the hardest types of fever to diagnoses, especially without any respiratory symptoms and is only diagnosed by exclusion and possibly by the knowledge of an epidemic situation. The urinary condition, usually found, is pyelitis. This condition has been noted—especially in girls—as a cause of an obscure fever more often than any other, with the exception of an otitis media. Of the upper respiratory conditions to claim our attention, infected tonsils and adenoids come first with antrum and ethmoid sinus conditions closely following, the latter to be suspected especially with a history of a previous grippe attack. As a cause of fevers long continued, infected tonsils with oftentimes a complicating cervical adenitis needs special mention. This form of diseased tonsil can easily be overlooked as it is small, submerged, and with a diseased base infecting the lymphatic tissues.

From the fifth to the twelfth year fevers enter the confines of the adult type and are less a matter of indefinite diagnosis.

Focal infections, especially of the teeth, are not overcommon in the young child, but in a child of lowered vitality may play a great part in causing an obscure fever. The subject of dentition is interesting from a diagnostic standpoint, for it has been found on numerous occasions that instead of dentition being the cause of a child's particular fever, a disarrangement of some other part of the body is complicating the dentition process. Mothers and neighbors have a happy faculty of diagnosing dentition indiscriminately and the tendency of physicians to lay too great a stress on teething as the cause of most ailments in young children is not overestimated.

Pneumonia in children can easily be overlooked, but a conscientious and thorough examination will obviate that difficulty. The exanthemata are not so easily diagnosed until watchful waiting brings results. Other diseases may be named as typhoid fever, tuberculosis and malaria, but all three can easily be eliminated by a proper blood test. There are two distinct kinds of fever, easily misinterpreted, that should be thought of in all sickness in children, especially after it runs over a reasonable expectancy, bed fever, due to lack of muscular action which should be remedied by getting the patient out of bed, and starvation fever, due to lack of food, especially carbohydrates.

In this paper I have not made mention of the common ailments producing fever in children easily diagnosed, but only of those which in my mind make a closer study indispensable.

As to the treatment of fevers in children, it is well to state that the large majority of children bear fever well, if it is not too high and it is always a matter of precaution not to tamper with the fever too much or else we will mask our efforts toward a successful diagnosis.

Summary: I have always borne in mind the saying, "When in doubt look for ear trouble, pyelitis, empyema or typhoid."

MEDICAL PRACTICE AS A BUSINESS.*

W. R. Boyer, M. D., Pawnee City, Neb.

This topic on the program, has no doubt, been regarded by most of you as a humorous subject—a sort of thing to joke about. Indeed there is a story current wherein a doctor in a spirit of retaliation toward a young lady employed in a bank, who had been poking fun at him, threatened to withdraw his account at the bank. It is easy for most of us to appreciate the humor of his threat.

Those who may have taken the subject of the paper seriously, I presume, are expecting me to offer a plan or method by which a doctor may secure a wide and extensive practice among a large, wealthy and generous clientele from which he will secure prompt payment of large fees. If so, they will be disappointed and I trust agreeably so, for what I shall say will have nothing to do with large fees or the ability to make collections from impossible people. This can only be done by specialists and in this sense I do not mean specialists in any branch of medicine or surgery, but specialists in this particular faculty which can only be attained by few. Indeed it is not really an attainment. It is inborn genius and can never be possessed by the great majority of our profession. What I shall offer you in this paper is within the possibility of everyone here and every other doctor of medicine, anywhere.

I believe that there should be a chair of business administration in every medical college, for no man can go out into the world as a practitioner of medicine, or any other vocation, and do his best without some sort of business education and few of us have any possibility of attaining such, either before or during our college career. We start out with an overhead of ten or twenty thousand dollars, usually a large part of it borrowed, and business poor. If ever a man needs business sagacity it is then. He is beset by every beggar and begging enterprise imaginable. He is besought for contributions to churches, lodges, fairs, building funds for South Sea Islanders, who have no need of houses and clothes for Hottentots who have no desire for them. Every real estate man, inventor, stock salesman and insurance agent, to say naught of oil and mining philanthropists, will be so interested in him becoming one of the money kings of the locality that they will gladly and willingly offer to him the most amazing opportunities to become so at a very small cost. Most of us fall for some or all of these things. I did. I do yet.

Were I to be taken into the confidence of a young man about to begin his medical career, I would advise him to do just as I should do were I privileged to be set back some 30 years and permitted to reenter the field of the great profession—and my chief sorrow is that I had no one to inculcate this idea into my brain together with what medical acumen I had. Had it been so, I would now be one of the financial assets of my community, instead of a contributor to the incomes of the stockholders of a bank.

Were I to have, as I have said, the opportunity to again swing my shingle to the wind as a young man under the age of thirty, I would go to one of the smaller towns of our state, a so-called one or better, two man town and, were the other man at all competent and a gentleman, I would make him my friend, confidant and counsellor and endeavor to make the community believe that he and I, working in harmony, were as able to care for the physical health of the community as any living men in our profession. In other words, I would endeavor to keep the confidence of the people in the local profession such that none would go outside except at our suggestion and by our advice. I learned by experience and observation that nothing is gained by belittling a colleague. It costs good money every time. It hurts him, of course, in a way, but the damage to the doer is irreparable and I regard the friendship and confidence of my colleague as of more value than that of any other man. Keeping the confidence of the people and the business at home is the great thing.

---

*Read before the meeting of the Third Councilor District Medical Society, Table Rock, Oct. 12. 1922.

But to go on with the plan: Here in this small town, I would rear my little family. I mean my family when they were small, for I do not wish to go on record as an advocate of birth control or race suicide. That would be poor business for a doctor. The small town or village offers a man everything to make him what he should be: Broadminded, broadly experienced, selfreliant and resourceful. Here he meets every condition of life. The extremes of age, worldly wealth, nationality, color, and, let me not forget, temperament, also almost every disease condition. In this capacity alone one can achieve the highest ideal of the medical man.

Now, returning to the text: While I know that the real business of a physician is to relieve suffering and heal the sick, there is the financial side which we are most interested in under the caption of this paper. The first thing I would do would be to establish a goal in the saving of one hundred dollars every month which would be invested in the purchase of 16 shares of stock in a reliable building and loan association. I would permit nothing to interfere with this plan and the payment of the hundred dollars each month and if I did not have it I would go to my debtors explaining my need and I would get it. Indeed I would deny myself a good deal were it necessary but under present conditions I do not see how any man in a small town could fail.

At the end of nine years the company would hand me a check for sixteen thousand dollars. I would place this in a farm loan at, say 5% without taxes, which would net me eight hundred dollars a year. I would then buy another block of the same kind of stock but this time I would buy 26 shares, as I would have eight hundred dollars to invest in addition to the original one hundred per month, which would make one hundred and sixty-six and a fraction per month. By continuing this for another nine or ten years, this block would also mature and the company would hand me another check, which would read this time twenty-six thousand dollars, and I would be master of FORTY-TWO THOUSAND DOLLARS in cash.

Taking 27 years of age as a fair average for starting into practice I would discover myself independent at the age of 46. My children, should I happen to be the father that I am, would now be ready for college and I would if I so chose, remove to a city having such, and retire or take up some office specialty for which my 19 or 20 years of general practice had developed my adaptability, and which would pay living expenses and afford me plenty of odd hours for recreation and reading, which had been denied me theretofore. I would be on easy street.

This plan is no iridescent dream but a possibility with every one engaging in this profession. That is not all, for it would put the present day problem of supplying the rural population with doctors, out of the running and put every doctor at the age of 50 where practically none are now.

Now, for us who are older and who did not start some such saving method early and who at the present time are still on the grindstone, I can only offer what seems to me to be the most plausible plan. To set a goal and work to it, saving at least one hundred dollars a month and as much more as your business will admit, and investing it in building and loan or other safe and sure securities where that much can be placed every month, and seeing that none of the payments lapse. It will stimulate your collection efforts and stimulate your enthusiasm in your business to have the necessity of this much ready money every month. Then to stay by the place where you are until you feel you are on easy street before you think of changing locations, which has spelled the financial ruin of a large number of our profession.

We should never bother our minds as to what this or that man is making or doing elsewhere or how successful some other doctor may seemingly be in some larger or better town, but keep our eyes only on the fixed idea of saving so much every month and salting it down. It is not the money or name we may have made or how wide and valued our reputation which is of value to us at the age of 60, but it is the money we have which purchases ease and contentment and independence.

As a resume, I would say that my ideal of a physician would be one who settles in a location in general practice and stays there endeavoring in every way to make himself and his work indispensable to his locality. Who strives in every way to increase the efficiency of his colleagues and at the same time to increase his own efficiency, for I am here to acknowledge my debt to my associates and to say that I have learned more from them than from my alma mater and their esteem and influence has added more to my capacity and business than any other agency. I only trust they feel the same toward me. Then to save for investment in safe securities which are interest bearing, at least one hundred dollars a month, and sticking until he has attained a competency.

DOUBLE UTERUS AND REPORT OF CASE.*

A. L. Kee, M. D., Cambridge, Neb.

The uterus and the vagina are formed by the fusion of the two Mullerian ducts, the union taking place from below upward. Lack of fusion at any point throughout the lengths of the two canals explains almost all of the anomalies that are observed, and rudimentary development of one duct will account for the balance. All degrees of lack of fusion are to be noted, there being one case on record where two complete but single and distinct parturient canals with two vulvae were found, and it is not rare to find the uteri indented in the middle, which is just the indication of the upper end of the line of fusion of the two ducts.

In some animals the two ducts do not fuse, but two tubular uteri exist. Not always are the two sides of the uterus and vagina equally developed and we observe gradations from completeness of the two halves to almost entire absence of one Mullerian duct.

The rudimentary side lies as an appendage to the well developed uterus, but since its canal, four times out of five, does not communicate with the vagina, in all the deformities the two halves are usually not symmetric, one or the other horn is larger, or the vaginas are unequal, sometimes one of them ends blind at its lower end.

Menstruation comes from both uteri simultaneously but sometimes only from one at a time. Pregnancy may occur in one or both horns, twins having been found in one horn. If each horn contains an ovum, the two children may have been conceived at different times and be delivered at intervals, thus raising the suspicion of superfetation.

Pregnancy is ordinarily undisturbed, the side not involved growing and forming a decidua similarly to ectopic gestation. The decidua of the empty side may be cast out, while the pregnancy continues on the other side.

The course of the case resembles an abortion. Muller records cases of menstruation from the empty horn during pregnancy. Abortion may occur and it may be difficult to clean out the uterus, especially if there is only one cervix. It is doubly important to insert the finger for the curettage. In septic abortions it is necessary to empty both sides.

Labor is often normal but these complications have been observed: Weak pains and atony in the third stage, with postpartum hemorrhage; the nonpregnant portion of the uterus may prolapse under the other and act like a tumor incarcerated in the pelvis; the nonpregnant cervix may be forced down to the vulva with the head; pregnancy in a rudimentary horn resembles ectopic gestation very closely.

Mauriceau and Vassal, in 1669, put the first case on record and now over one hundred cases have been described.

Report of Case: Patient came to me in February, 1916, complaining of painful and irregular menstruation, soreness and offensive discharge.

History: Commenced menstruating at fourteen years of age, at which time she was sick in bed for five or six weeks, with fever and suffering with pain and soreness in pelvis. She was not able to work for five or six months and did not feel well at any time. She received treatment from several physicians. She was always confined in bed from eight to ten days prior to and during menstruation.

---

*Read before the Republican Valley and Tenth Councilor District Medical Society, Hastings, Oct. 26, 1922.

Examination: Temperature 100, pulse 90, constipated, very rigid and tender over pelvis, offensive lochiorrhea, which at times was streaked with blood. Very tender on digital examination; could not make a satisfactory examination without producing severe pain. Found mass in Douglas' culdesac, but could not outline same. Anaemic, 70% heamoglobin. Microscopical examination of the excretion showed pus cells.

Treatment: Rest in bed. hot packs, saline purgative, tonics, hot douches and ichthyol tampons for a period of three months without much, if any, improvement.

Operation: Median incision disclosed two well developed uteri connected to one cervix. The left uterus, tube and ovary were normal to the best of our knowledge. The right uterus extended to the right and was retroverted containing three subperitoneal fibroids, fibromuscular in character. Right ovary and tube which filled the culdesac were cystic. The right uterus, ovary and tube were removed. The opening of the cervix was cauterized. A flap taken from the uterus removed, was stitched over the exposed cut surface of the uterus remaining. The broad and round ligaments of the uterus removed were stitched to the surface of the remaining uterus.

Patient made uneventful recovery. She is now in good health and wants to know if she can become a mother.

ACUTE APPENDICITIS COMPLICATING PREGNANCY.

A. W. Anderson, M. D., West Point, Neb.

Acute appendicitis is a very dangerous and not infrequent complication occurring during pregnancy.

A. J. Weaver reported 633 cases mostly from American literature, with complete records of 495, and in his study of these 495 cases found, that of the suppurative cases the death rate was 29.7% in the operative cases and 80% in the non-operative; While of the non-suppurative cases it was 1.1% in the operative ones, and 4% in the non-operative.

The record of abortion or death of the fetus he reports was obtainable in 628 of the cases and the rate proved 40%.

H. H. Schmeidt, of Vienna, collected 485 cases in 1911, and came to the conclusion that 1% of all pregnant women have appendicitis, and that 2½% of all women having appendicitis are pregnant.

The high mortality attributed to appendicitis in pregnancy is due, not because the patient is pregnant, but to the failure to recognize the condition early, thereby delaying surgical treatment.

Pregnancy exerts no untoward influence upon the normal appendix. However, it can, and frequently does, aggravate existing chronic inflammatory conditions, or appendices that deviate from the normal in length, mobility, shape and location.

Chronic appendicitis with numerous firm adhesions may mechanically interfere with the enlargement of the uterus, with the uterine contractions of labor, cause subinvolution, excite oopheritis, be the exciting cause of abortion, cause contortion of the adjacent tube leading to extrauterine pregnancy, etc.

Oftentimes we find coexisting with a chronically inflamed appendix a large right cystic ovary with more or less oophoritis and salpingitis. The appendix may be the primary focus of infection or the infected tube and ovary may act vice versa upon the appendix.

The diagnosis of acute appendicitis during pregnancy is often overlooked because the usual pathognomonic symptoms are blurred. Moreover, both the patient and the physician are accustomed to ascribe all symptoms referable to the abdomen, as more or less minor disturbances of pregnancy. The examination by palpation is less satisfactory, especially in the later months, because the ascending uterus covers the iliocecal region. (Note: Some authors report that 80% occur during the first six months).

In making a diagnosis, one must exclude ectopic gestation, salpingitis, oopheritis, cystic ovary, with or without a twisted pedicle, typhoid fever, cholecystitis, pyelitis, ureteral calculus, mucous colitis, fecal impaction, floating kidney, etc. At times any of the above may so closely resemble appendicitis as to lead to diagnostic and operative errors.

It is a mistake to operate on any woman for appendicitis without excluding a right-sided pyelitis, which can be differentiated by a microscopical examination of a catheterized specimen of urine which usually reveals pus in large quantities. The pain varies in intensity depending on the amount of retention. The temperature as a rule is higher, and the patient may have chills.

Tubal pregnancy is not so important because in both cases early operative interference is indicated and either or both conditions can easily be taken care of through the same incision.

In ureteral calculus the pain is usually excruciating in character, often radiates down toward the labia, and microscopical examination of the urine quite frequently reveals blood. Ureteral catheterization plus the X ray is also of aid. (80% of ureteral calculi, they say, are visible).

Salpingitis may at times be difficult to eliminate but searching the previous history often reveals facts indicating infection. Bimanual examination may elicit a mass in the tubo-ovarian region. Salpingitis may be the exciting cause of appendicitis in some cases; therefore, when in doubt, an exploratory operation is better than a fatal delay.

If, however, one remembers the order of symptoms in the usual typical case, it alone will exclude many of the above possibilities. The order is as follow—and is all important:

First. Pain, at first referred to the upper abdomen or epigastrium, varying in intensity, gradually changing to the right iliac region, or to the location of the diseased appendix.

Second. Nausea and vomiting which usually come on within two or three hours after the onset of pain. There may be only two or three efforts at emesis and at times only one.

Third. Local tenderness and muscular rigidity.

Fourth. Elevation of temperature which is a manifestation that the products of infection are being absorbed. Usually the rise of temperature is slight, unless there are other complications, as general peritonitis, etc.

Fifth. Leukocytosis. This is present also in normal pregnancy and is not the index as to severity of infection, that it is in the nonpregnant.

Sixth. A careful history will often reveal that the patient has had previous attacks before pregnancy or in previous pregnancies.

The prognosis rests upon either delayed diagnosis and delayed surgical intervention or early diagnosis and early efficient surgical treatment. The physician can not foretell what may happen in 12 to 24 or 48 hours following the onset of acute appendicitis. When the diagnosis is made early and operation performed early, the mortality is practically nil. General peritonitis or localized abscess can be prevented by early diagnosis and early operation. The high mortality is due to late diagnosis or diagnosis followed by expectant treatment with late operative intervention. It is well to bear in mind that a pregnant woman who is otherwise normal, is a good operative risk.

The prognosis is better if there is no interruption of pregnancy, either induced or spontaneous. The toxic cases often abort whether operated upon or not, which adds fuel to the flame. The early surgically treated cases rarely miscarry. The interruption of pregnancy is contraindicated before operation in the vast majority of cases. Early operation holds forth a better prognosis for both mother and fetus.

Quoting Weaver again, "In cases that go to suppuration, as two out of three do, six out of seven die when operation is denied and nearly one out of three die when it is performed. This falls to one in twelve if operation is done within the first 48 hours.

TREATMENT

Prophylactic—First. In abdominal operations upon women of the child bearing age, the appendix should always be examined and if any deviation from the normal is found, it should be removed.

Second. Many cases in girls and young women, who complain of pain and distress in the right side, between, and at times during menstruation; who have no apparent lesion of the genitourinary system may be suffering from an unrecognized chronic appendicitis. It is well to bear this in mind, and if found, appendectomy should be recommended.

Third. History of chronic appendicitis before pregnancy or in previous pregnancies in women of the child bearing age, the appendix should be ablated.

Fourth. Constipation is to be avoided.

Operative—First. Should be immediate upon diagnosis, no matter in what trimester, or if it is at the time of the usual menstrual period or not.

Second. The technique is the same as in a simple appendectomy, except that the incision should be further toward the right side rather than a median, because the uterus interferes with easy access to the iliac fossa. Disturbance of the uterus, tube and ovary should be avoided as much as possible, by either traction, instruments, or drains. This often avoids irritation, which may excite uterine contractions, and as a sequence, lead to abortion or miscarriage.

In suppurative cases the appendix should be removed if easily accessible, otherwise simply drain. Avoid disturbing nature's efforts in walling off the process from extending upward. Give large doses of morphine after operation to delay the abortion or miscarriage as long as possible to give nature a chance to build up further fortifications, to be of aid when uterine contractions do start. At times it is possible to carry the patient through without this fatality to the fetus.

Because of the severe inflammation, the uterus is unable to empty itself in many instances. In these cases it tests the surgeon's ingenuity as to what, at times, is best to do, because of the patient's low vitality. This added burden makes her outlook much more critical. The uterus should be emptied in these cases where miscarriage is inevitable, with the least disturbance possible. Early, the curette; later, at times vaginal Cesarean section has to be resorted to.

Dr. De Lee advocates where miscarriage is in progress at time of operation in these desperate cases, and in which abdominal Cesarean section is undertaken, that it is best to do a total hysterectomy, thereby establishing good drainage also below, and thereby removing a large body which is undergoing molecular disintegration, and is a good field for infection.

It is further important in the postoperative care of these severe cases of peritonitis, or in any case of peritonitis to withhold everything by mouth. Even a teaspoonful of water will start peristalsis. Normal salt solution, or tap water which is some times better retained, should be given per rectum, continually at the rate of one and a half pints per hour. The patient will retain this without any distress, if given correctly. I firmly believe that this last statement saves many lives in itself. That is, furnishes the patient with water to dilute the toxins and helps eliminate them.

REPORTS OF TWO RECENT CASES.

Mrs. A. P., age 19, white, married, primigravida, about 6 months pregnant. First seen at 11 P. M. on Sept. 16th, 1922. She was complaining of cramping pains over the entire abdomen of a few hours' duration. She had taken salts about twelve hours previously because of a headache. Saw her again at 10 A. M. on the 17th. She reported that she had vomited several times during the night, also that she had to void frequently. Physical examination revealed slight tenderness and slight rigidity over the right lower quadrant. No elevation of temperature. Catheterized specimen of urine was examined and proved negative. Saw patient again at 7 P. M. Physical findings about the same as before, temperature 99.6, pulse 100. Urine again examined and found negative. Blood count: Whites 18000, polymorphonuclears 90%. Operation advised.

She was operated on about four hours later at her home. A very large distended, friable appendix was removed. Free fluid was encountered in the peritoneal cavity which appeared slightly turbid, so a small drain was inserted. This was removed in forty-eight hours. Recovery was uneventful. Patient did not miscarry.

Mrs. G. W., age 20, white, married, prigravida. When about three months pregnant had an acute attack. Operation refused. Treated expectantly. Was up again in about four days. When about seven months along had another mild attack and again in the last month of pregnancy. Several days after confinement, but before she had been permitted to get up, she developed a rather marked acute attack, with a temperature of 100°, marked rigidity and local tenderness. Operation was again advised, but again refused. It gradually subsided, but she was never free from soreness in the right side. Three weeks later pain again became more acute. This time she submitted to operation at which time a gangrenous appendix was removed and a firmly walled off abscess drained. She made an uneventful recovery.

"A never-failing cure for felon is to keep the affected finger wrapped in gauze and keep it saturated with tincture of aconite."

"Medicine is no longer looked upon from a purely altruistic point of view and we should come to a realization of this fact."

It is estimated that during the year 1921 there were 93,000 deaths in the United States as a result of cancer as opposed to 89,000 deaths in 1920.

RUPTURED TUBAL PREGNANCY: A CASE RECORD.*

Chas. F. Ulrich, M. D., Valentine, Neb.

A German-American dressmaker of 28 entered the hospital October 28, 1919, complaining of severe pain in the region of the appendix accompanied by nausea and vomiting.

PAST HISTORY: Had always been in good health until after her marriage nine years ago. Since then she has had considerable trouble with her menstrual periods. They occur from three to six weeks apart and are always painful throughout the entire period, usually six days. She had two miscarriages at about the fourth month. Menstruation did not cease during these pregnancies. Six weeks ago she noticed an unusual weight and soreness in the pelvis, and has been flowing ever since.

PRESENT ILLNESS: In September. 1919, she noticed a feeling of weight and soreness in the pelvis. Six weeks later, October 27, she had an attack of severe pain in the lower right quadrant of the abdomen. The pain continued for several hours and was associated with nausea and vomiting. After this she continued to feel quite comfortable until the next day when she had another attack of pain lasting about six hours. She was given a hypodermic injection which gave considerable relief, although any slight change in position would cause severe pain in spite of the hypodermic. October 29 she felt good except for the soreness in the pelvis. November 1, she had another attack of pain which continued four hours. This time, however, the pain was more or less general throughout the pelvis. From this time on she continued to feel fairly good, was up and about until November 12, when she had another attack of pelvic pain similar in character and duration to that of November 1. November 20, following an attack of pain, a curettment was done which seemed to give much relief. November 26, another attack of pelvic pain occurred. Since October 27, she has had some bloody discharge, more on some days than others. The first three attacks were accompanied by nausea and vomiting, subsequent attacks only by nausea. There has been some occipital headache from the beginning of the trouble.

PHYSICAL EXAMINATION: Well nourished, skin dry. Tonsils and teeth negative. Heart action regular, but rapid. Sounds of fair quality, no murmurs or thrills. Artery walls normal, B. P. systolic 120-140, diastolic 75-90 (five examinations). Abdomen rather tense and very tender to touch. Right lower quadrant more prominent than left. An indefinite mass in the right side extending above the crest of the ilium and beyond the median line to the left on a level with the umbilicus. Cervix soft and slightly dilated, a bloody discharge is oozing from the mouth of cervix. Considerable odor. A boggy mass is felt in the cul-de-sac,—does not feel like fluid. Uterus could not be palpated on account of tenderness. No rectal examination was made. Reflexes and pupils normal. Temperature 97-100.5, pulse 56-118, resp. 18-36, urine 30 to 60 ozs., Sp. Gr. 1010-1020 (fifteen tests), blood Hgb. 75% leucocytes 9000. red 3,800,000.

ORDERS: November 27, subpectoral normal salt. Icebag over lower abdomen continuously. Morphine one-sixth grain subcutaneously whenever necessary for pain. From this time the patient gradually improved, was comfortable and felt well although the mass in the right side seemed to be a little larger than it was on first examination. December 16, she had an attack of severe pain in the lower abdomen, she grew faint, the pulse became weak and rapid; in general there was evidence of considerable internal hemorrhage so immediate operation was advised.

NOTES ON THE HISTORY: It is always well to consider a patient's complaints of primary importance because from this we always work out the diagnosis and the subsequent treatment. What diseases do we know that cause severe pain in the abdomen associated with nausea and vomiting? Perforation of any of the organs of the abdomen will cause pain and consequent vomiting. Pedunculated tumors of the uterus, ruptured varicose veins of the broad ligament, kidney calculus, gallstone colic, acute salpingitis, intestinal obstruction, strangulated hernia, intraperitoneal hemorrhage or injury may cause it.

Since her marriage nine years ago this patient had symptoms which are probably to be connected with her present troubles, that is the disturbance in her menstrual periods and the miscarriages. She has been flowing almost constantly for six weeks with attacks of severe pain in the pelvis accompanied by nausea and vomiting. There is no evidence that the vomitus contained blood and nothing is said of the condition of the bowels in the history, but since there was no abdominal distention we may suppose that there has been no intestinal obstruction.

The physical examination shows evidence of anemia apparently of the secondary type and presumably due to long continued flowing and possibly to concealed hemorrhage. Aside from this the greatest point of interest is in the mass in the right side of the belly and the mass in the cul-de-sac. The fact that the mass does not feel like fluid. means nothing. It is hard to see or feel anything we are not sure of. It is like looking for Grocco's triangle; we always find it when we know there is fluid in the opposite side of the chest and vice-versa. The same is true of capillary pulse; we find it when we know there is an incompetent aortic valve. So this mass coming on as it did, during a period of six weeks is very suggestive of fluid of some kind fairly well walled off. There are no solid tumors that grow so rapidly. The amount of pain this patient suffered, coupled with a temperature that never went higher than 100.5 is inconsistent with inflammation anywhere in the body. A tumor twisted on its pedicle would not account for the remission of pain for two weeks, although this is possible; but it would not explain the great mass in the right side of the abdomen. Ruptured varicose veins of the broad ligament cannot be excluded. Free blood in the peritoneal cavity always gives rise to pain and as the blood clots and the bleeding ceases the pain also ceases. She is a married woman so an abnormal pregnancy may exist. A ruptured tubal pregnancy would give symptoms exactly like those we get in this case. Her history of menstrual trouble and two miscarriages since her marriage nine years ago suggests venereal infection. Nothing is said about the husband's health but it is a safe assumption to say that either he or this patient herself has syphilis. Apparently no Wassermann test was made.

---

*Read before the Eighth Councilor District Medical Society Meeting, Atkinson, October 11th, 1922.

Abnormal pregnancies and miscarriages occur more frequently in a syphilitic mother than in any other class, so we seem to be driven to the diagnosis of ruptured tubal pregnancy with repeated hemorrhage. The operation will tell more about the diagnosis.

PRE-OPERATIVE DIAGNOSIS: Ruptured tubal pregnancy. Hemorrhage, Varicose veins of the broad ligament. (?)

OPERATION: December 16, 1919, Ether anaesthesia. A median incision was made below the umbilicus about six inches in length. Upon opening the peritoneal cavity large clots of blood protruded into the wound. About two quarts of clotted blood were removed from the peritoneal cavity. In the distal half of the right fallopian tube there was a ruptured mass about the size of an orange. This together with the tube was removed. The abdomen was closed in layers without drainage. December 26, 1919, patient was dismissed relieved.

SUBSEQUENT HISTORY: September, 1922. Patient has been entirely well since her operation in 1919. Two Wassermann tests were made a year ago, one spinal fluid and one blood. Both were negative. It is of interest in connection with this woman's troubles to know that her husband died of cerebral syphilis about eight months ago. The probability that her trouble had some relation to her husband's illness was well founded.

NON-TUBERCULOUS INFLAMMATION OF CECUM. REPORT OF CASE.

Frederick G. Kolouch, M. D., Schuyler, Neb.

I was asked by Dr. M. G. Wohl to report the following case as the histological findings were quite interesting.

History: Mr. J. A. was seen by me Feb. 17, 1920. Age 55, father of eleven healthy children. Family history negative, personal history was negative other than that he complained of recurrent attacks of abdominal pain for the past fifteen years. At first he gave but scant attention to this, as the attacks were not very bad and he seemed to feel good between attacks, until lately they became more frequent and severe. The pain seemed to center in the umbilical region.

During the last few attacks he sought relief by taking enemas, which enabled him to pass a great deal of gas and in that way he was greatly relieved. Associated with the pain he had some frequency of urination, but never passed blood or pus in the urine, no burning nor pain on urination. Attacks of pain had no relation to meals, came on any time of the day, and lasted one to three hours.

After the spell he always had some soreness on right side, always was relieved with an enema but suffered from constipation. No history of diarrhea, no blood, no mucous in stools.

Present Complaint: Attack is very severe, accompanied by vomiting, pain in abdomen is excruciating, even after taking an enema and passing a great deal of gas.

Physical Examination: Patient a fairly well nourished man, apparently 50 years old lying in bed doubled up with pain, vomiting every few minutes, and has the appearance of being collapsed. Rectal temperature 97, pulse 120, blood pressure 155-110, white cell count 16000. Examination of head, heart and lungs revealed nothing abnormal. Examination of abdomen showed a boardlike rigidity of the right lower quadrant, tenderness over entire abdomen; no definite mass could be palpated on account of rigidity and tenderness. Urinary findings normal.

This being an emergency case, no further laboratory examination was made. On account of history and physical findings, a diagnosis of acute perforative appendicitis was made and operation under ether was undertaken. Palpation under ether showed a definite movable mass in the right lower quadrant of abdomen, which led me to think I was dealing with a neoplasm, and, therefore, I made an incision which would permit its radical removal. Right rectus incision. On opening peritoneum a milky odorless fluid escaped, omentum was plastered over cecum, which was wiped away and cecum and appendix lifted into view. The appendix was very rigid and erect, very much thickened and enlarged to size of normal adult ileum. The cecum was markedly involved in the same process. Enlargement of lymph nodes in the mesentery of the ileocecal junction. Surrounding tissues were free from suppuration.

The pathological problem here was difficult to solve. Tuberculosis of the cecum was ruled out as there was no evidence of tuberculosis in the rest of the peritoneum. I especially noted the absence of tubercles. Recurrent pyogenic appendicitis was ruled out on account of no suppuration in surrounding tissue, and relative absence of adhesions. Actinomycosis of cecum was considered, but there was no infiltration of the abdominal wall and no characteristic pus. Whether there was an ulceration in the cecal mucosa, possibly malignant, there was no way to determine on account of the thickness of the cecal walls. The most plausible diagnosis was a malignant neoplasm, but the absence of stricture and the prolonged course of the process gave room for doubt.

Considering everything I thought the patient would be better off without the diseased cecum, adjoining ileum and colon. The portion of the bowel to be removed was mobilized, blood vessel clamped, bowel was divided about two inches from ileocecal valve and again about middle third of ascending colon. A side to side anastamosis was established, posterior peritoneum closed, omentum placed around the site of anastamosis, abdomen closed without drainage.

Patient made an uneventful recovery, leaving hospital the fourteenth day. He has felt good ever since the operation, weighs fifteen pounds more than his previous average weight and has been relieved of his constipation.

Pathology was described in operative findings. Appendix and cecum were greatly thickened, but no ulceration in cecal mucosa, no stricture formation, no vegetation, no evidence of tuberculosis.

Hartmann described a hypertrophic form of tuberculosis of cecum under the name of tuberculous typhlitis simulating neoplasm. Those cases usually showed ulceration in cecal mucosa and the cecum was enveloped in a sclero-adipose mass. They usually showed more or less deformity on account of the contractions of scar tissue. Microscopically tubercles were seen in various stages of activity.

Histological Examination by Dr. M. G. Wohl: Sections from appendix proper shows it to be a chronic interstitial appendicitis. Sections from the nodule, which was the appendix, shows the greater part of the tissue to be necrotic. At the periphery of the necrosed areas there are cells of the polymorphonuclear type and round cells. There are areas that show islands of compactly placed cells that are large and possess nuclei that are rich in chromatin. I feel that these cells are of endothelial type. Then there are columns of cells of spindle cell type. The microscopical picture is a rather bizarre one. I am of the opinion there is a chronic infectious granuloma, but am unable to state definitely as to whether it is of tuberculous or specific nature.

Subsequently a negative Wassermann, and negative Noguchi tests precluded the diagnosis of syphilis.

There is no proof that the case is tuberculous; it is a chronic inflammatory process without formation of giant cells or tubercles.

Hartwell(1) reported a case of this type under the heading "Nontuberculous inflammation of cecum," but he says it is unsafe to say that the case is not tuberculous because many of these later develop a tuberculous peritonitis. The interest in the case lies in the obscure etiology.

---

1. Surgical Clinics of North America, Volume 1, No. 2.

PRIMARY UTERINE INERTIA IN TWIN PREGNANCY FOLLOWING PREMATURE RUPTURE OF MEMBRANES.

A. Townsend, M. D., Minatare, Nebraska.

On the morning of Sept. 22nd, Mr. McK. called at the office, said his wife was pregnant and was at this time having a slight bloody discharge from the vaginal tract. I advised him to go home, put her to bed and keep her absolutely quiet and to report to me later. I did not hear from him again until the night of the 23rd when he called me to his home. I found the cord prolapsed, which was absolute evidence of the rupture of the membranes. I elevated her hips, dilated the cervix and replaced the cord. I then irrigated the vaginal tract with a hot antiseptic solution and tamponed with a boric acid gauze. They again called me about nine o'clock on the morning of the 24th, when I delivered her of a five months foetus which gasped two or three times and expired. Following the birth of this foetus I resorted to every method known to the profession to remove the placenta. I was unable to stimulate a contraction no matter what efforts I made. I examined the abdomen, found that the uterus was large, hard and firm. I then concluded that I had a multiple pregnancy to deal with and instead of two, there possibly was but one placenta, which eventually proved to be the case. I then cleansed the vaginal tract, tamponed and waited for contractions to develop. I repeated this treatment on the 25th, 26th and 27th, but no contractions were evident and the patient was perfectly comfortable, slept well, had an excellent appetite and no fever. At about 10 o'clock on the morning of the 28th, I had the patient anaesthetized. I again dilated the cervix, which seemed to be gradually closing, and carried a heavy strip of boric acid gauze to the fundus of the uterus, leaving about two inches of the gauze protruding from the cervix. I again cleansed the vagina and tamponed thoroughly. I did not hear from them again until about 3 o'clock of the morning of the 29th. I found her with good uterine contractions. I removed the tampon and found the dilatation good. The labor pains continued regularly and without interruption, I might say, until about 5 o'clock when the second foetus was born. I had but little difficulty in removing the placenta. A portion of the placenta showed evidence of having been detached from the uterine wall for some time. The uterine muscle responded quickly to a hypodermic of ergotine. I used the ergotine in this case as a precautionary measure to control a possible postpartum hemorrhage, something I do not use as a routine in my normal deliveries. Nothing untoward developed and she had a normal convalescence. The patient is a young woman, has had four children previous to this—no multiple pregnancies and this her first miscarriage. I have had this experience twice in my practice, the first extending over a period of four days and this a period of five. I have followed the same treatment—expectant—in both cases with the best of results.

"Now there aint no use to worry and there
aint no use to fret
Cause the things that you've been wantin'
haven't happened to you yet.
There's no use to be complainin' and be always in a stew
'Cause the other feller's gettin' what you
think belongs to you."

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building. Omaha.

F. A. Long, M. D.,
Editor, Madison, Neb.
R. B. Adams, M. D.,
Associate Editor, Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association
Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.
F. A. Long, Chairman Madison
W. O. Bridges Omaha
B. F. Bailey Lincoln
R. B. Adams, Ex officio Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII March, 1923 No. 3

Annual Meeting, Lincoln, May 14-17

ANNUAL DUES.

Annual dues of $5.00 have been delinquent since Feb. 1, 1923. All delinquent members are subject to lose their Journal and Defense Rights. Send your dues at once to your county secretary-treasurer so that you will remain in good standing.

PAPERS.

By the latter part of March the Programme for the State Meeting in May will be closed. All doctors wishing to read papers before this meeting please send your names and titles to the Association Office at once. Doctors out in the State are especially urged to send Titles.

DELEGATES

Be sure your Delegates attend the Meeting at Lincoln, May 14-17, 1923.

—R. B. Adams, Sec.-Treas.

THE PROFESSION OF RURAL NEBRASKA.

Nebraska, of all the states in the Union, is the only one without mineral resources.* All the states adjoining Nebraska—Iowa, Missouri, Kansas, Colorado, Wyoming, and South Dakota—have either coal, gas or oil; several have the three—Nebraska has neither. It is a purely agricultural state. Lacking in cheap fuels and raw material, it is not a manufacturing state and, therefore, centers of large population are few. Beside the two metropolitan cities there are no places having above thirteen thousand population. Railroad centers, division points and county seats, in a measure account for the larger of these places, but for the most part Nebraska's cities and villages are but community trading centers and are just what the agricultural communities make them. The town is a response to the farming-community need.

The medical profession of rural Nebraska is represented by the doctor in the country town; not necessarily the "country doctor" of song and story. The distribution of the profession in the state contradicts the current doctrine that the trend of the profession is largely toward the great cities, so far as Nebraska is concerned.

Nebraska has an able profession and the smaller cities and villages have a fair share of that talent in general lines and in the specialties.

This number of the Nebraska State Medical Journal—perhaps the first of the kind ever undertaken in the history of medical journalism—is dedicated to the profession of rural Nebraska and represents a part of the work of the rural profession.

A FEDERAL DEPARTMENT OF EDUCATION, HEALTH AND WELFARE.

At a conference recently held in Washington with all elements of the medical profession represented, General Sawyer, personal representative of the President, stated that it was the present purpose of the committee on reorganization of the federal departments to recommend to the Congress the establishment of a Department of Education, Health and Welfare, (with a secretary in the cabinet), and a subdivision into four bureaus—education, health, welfare and Veteran's Bureau. It must be understood that it is not the desire to build up a great federal organization, but rather to simplify and concentrate federal bureaus with a view to getting rid of the chaos and duplication that now exist in Washington. The proposed reorganization would increase the efficiency of every bureau involved with a lessened expense. The United States Public Health Service would be a part, probably the nucleus, of the proposed department. The support of the medical organizations of the country toward this goal is solicited.

---

*Barring a little coal pit in the southeastern corner, a small limestone deposit on the south bend of the Platte river, a few silicate of magnesia deposits, and the potash lakes of world war fame, the state is underlaid with nothing valuable, so far as our present knowledge goes.

A POINT OF VIEW.

In a letter to the editor from an honored member of this society now residing in another state, but who for a number of years had a general practice in an average small town in eastern Nebraska, is given a point of view worth publishing. He says:

> "Aside from purely scientific research and attainments, what the medical profession needs is more solidarity and less selfishness. Owing to modern methods of transportation the general practitioner, unless he is in a natural center of population, is doing less business all the time. The so-called specialist is appropriating the business that comes to him to his own selfish interests and with scant consideration for his professional brother who is pounding the country roads in 'arduous toil.' To a limited extent he is 'killing the goose that laid the golden egg,' because, I cannot believe, that the success of the specialist is to any great extent possible without the good-will of the general man. There are prosperous neighborhoods within fifty miles of Omaha which furnish the local man nothing but emergency work. Twenty years ago he got practically all the work. Today he gets only such a portion as cannot travel—fifty miles by auto being nothing at all to the average farmer. The time is coming when it will be very difficult to induce men of more than mediocre ability and attainments to stand by in the ordinary rural practice."

With which the editor agrees in part only. The general practitioner, collectively speaking, has fallen behind the onward march of modern medicine. With average ability and attainments, honesty of purpose, a willingness to do, some courage, a modern office equipment of modest proportions, the general practitioner in the smaller community will always have people making paths to his door, idolize him for his ability, furnish him a compensatory income "wish he would live forever" and revere his memory when he has departed.

SEX EDUCATION FROM A PHYSICIAN'S VIEWPOINT.*

About ten years ago a physician in one of our Western States wrote a physiology and ventured to insert a chapter on reproduction. His publisher refused to print that chapter. Today the question of sex education and sex hygiene is occupying the attention of the entire country. We have been caught in the wave of the movement which is destined to change the social world and to base man's future happiness upon the solid foundation of knowledge, purity, and a perfect understanding between the sexes.

"It is better to know things than to know them wrong," shall be our watch-word. Many of our important medical problems are those of public health, dealing with social diseases, and these must be solved by men of knowledge of social science. We are in possession of the medical science, and our next step in advancement, if we are to be the real profession of influence in uplifting humanity and doing good where good is most needed, is to become better students of sociology.

So far as we can apprehend nature's dedesign in the sexual life of humanity her specific function is reproduction of life to the next generation. The question is, should young people be instructed in the laws governing this function?

The policy of the past in our educational system has been such as to give a negative answer to the above question. For centuries past, silence or secrecy has been imposed on everything relating to sex.

Tradition has imposed upon the instructors of youth an edict of silence concerning all knowledge of human reproduction. The text books used in schools describing the body's function and structure, taboo the generative functions as completely as though such organs never existed.

Such information has been deemed immodest, unfit, and degrading.

There can be no greater satire on creative wisdom than to assume that a knowledge of the function which is given to cooperate in the devine mission of creation and to which the life of the race is entrusted, is not fit to be taught to young people.

But how do they get this information?

---

*Read before the Cedar, Dixon, Dakota, Thurston and Wayne County Medical Society, at Wayne, Nebr., Oct. 12, 1922.

Much of our current literature that passes as good fiction appeals to the youth. A great deal of it has for its chief allurement for a young mind something suggestive about sex relations. Of course, it is not immodest or in any way indecent, yet it arouses the curiosity of instructed minds. They want to know why? Just for one example to show how the demand is growing for such literature, call it high class if you want to, the fact remains that the Cosmopolitan Magazine almost doubled its circulation a few years ago after the story, "The Common Law", began. Randolph Hearst having acquired control of this publication, and knowing the growing insatiable desire for such grade of fiction, advised his managers to "dish up the sex stuff."

This new movement of educating all our youth in these real fundamental physiological facts was started seven or eight years ago. By some it was and is considered a "fad", the product of some would-be reformed neurasthenic mind.

Nearly the same thing was said thirty years ago from some medical men when the movement was started to put the teaching of the evil effects of alcohol and narcotics in our schools. We hear the objection that youthful minds will be unduly awakened or stimulated in a way not desirable. Why don't we object to the teaching of botany, biology, zoology and embryology? Here the complex sex nature of plants, insects, animals and their embryonic development is taught to mixed sexes with no apparent embarassment of pupil or teacher. Generally speaking, it is all the knowledge they get along the lines of scientific reproduction. Why could not one step more be taken and these same facts made to apply to the human family? Are we not worth more and is not a knowledge of our functions vastly more important than the growth of a hill of beans, a fish's spawn or how a chicken comes from an egg?

Teachers, physicians, and intelligent parents are coming to realize that laws, city ordinances, etc., alone will not cure the social evil. In the end all this progress towards reform must hinge on education. It is upon us and will be upon us more in the next five years.

We know that the sex glands constitute the very fountain of life. We know the powers of the laws of heredity and how important it is that the race cultivate health as a basis for sound mind, so valuable to culture and material progress.

We know that youths have a right to demand clean bodies, clean morals, clean minds, three foundation virtues that must be established in every boy's and girl's character.

Unless we teach these truths we shall be false to the honor of our profession and unworthy of the confidence of the people. The issue is clearly drawn. Our duty is to help make scientific knowledge and facts available to all the people.

Societies organized for the purpose of furthering the cause are becoming numerous. The American Federation for Sex Hygiene is now in its tenth year. The Society of Sanity and Moral Prophylaxis was organized in 1905. The states having branches of this organization are: Pennsylvania, Maryland, Colorado, California, West Virginia, Indiana, Connecticut, New Jersey, and Texas. The cities are: Seattle, Milwaukee, Detroit, Portland, Spokane, St. Louis, and Chicago.

It has been apparent to all that one of the chief sources of objection will come from the parents themselves. This natural custom of ancient origin of keeping the youth in ignorance of the important laws of nature is hard to overcome. The most intelligent of parents will not all object, but some will, preferring to do it themselves. All well and good then, for them. There is where it should be taught in the first place. The middle class of parents of ordinary intelligence will object at first. The parents of low intelligence do not take enough interest in what is going on in school to even recognize what is being taught.

Most parents want their children to know something of it, but dread to tell them or do not themselves know how.

There are many theories and ideal suggestions advanced as to how this enlightment shall be given but I will not dwell further upon it at this time.

—B. F. Gleason.

HEREDITY IN DISEASE.

The many definitions of heredity agree in the essential principle that it is the capacity of transmitting the characters or qualities of the progenitors to the descendants. According to the accepted theory, these characters reside in a small collection of cells, the germ cells, the specialized function of which is the perpetuation of the species.

According to this accepted theory, acquired characteristics, external mutilations, etc., cannot be transmitted to the offspring. Specific disease also cannot be transmitted, for the infecting agent is not present in the germ cells, but certain specific diseases notably syphilis, are at times transmitted to the foetus in utero. This however, is a case of early infection, not heredity in the biological meaning of the term.

The real importance of heredity as a factor in disease, is still a matter of discussion, and very few statistics are available that are of any value in determining the question in a scientific manner. The general opinion is, however, that no disease as such, is inherited, but that in certain diseases which affect the entire metabolism, a certain predisposition or general degeneracy is inherited i. e., is inherited in the germ plasm from generation to generation, which renders the individuals in each generation particulary liable to the same disease or type of diseases. This is especially true of insanity and nervous diseases, in which the neuropathic constitution, or nervous instability is inherited, manifesting itself in individuals in insanity of various types, feeble-mindedness, alcoholism, criminality, etc., depending upon evironmental circumstances. The exact relation of alcoholism to this neuropathic heredity is not yet established. Thomson says:

"The germ cells may in cases of extreme alcoholism be affected, but it is more difficult than most people think to substantiate this from human cases," and his opinion, as well as that of many other authorities, is that alcoholism is a symptom rather than a cause of neuropathic inheritance. There are some statistics, especially those collected by Davenport and Goddard, which would indicate that feeblemindness is more frequently directly inheritable than other forms of nervous diseases, but in other cases it also is only one manifestation of a general neuropathic inheritance. Thus Davenport states that epilepsy and feeblemindness may replace each other. Goddard gives the following statistics of 300 cases of feeblemindness, whose family history was carefully studied; 164 or 54% showed, "other feebleminded persons in such numbers or in such a relation to the individual case studied as to leave no doubt of the hereditary character of the mental defect."

Thirty-four or 11.3% more he considers as "probably hereditary."

Thirty-seven or 12% showed a neuropathic ancestry with various brain diseases, epilepsy, insanity, etc., occurring constantly in the family.

Heredity of disease, or properly speaking of disease tendencies, is not necessarily direct only from parents to offspring. The taint, or degeneracy, apparent in the child, may come from more remote ancestors, or may come from a collateral line. This is more apt to occur, when the parents, although both apparently normal, have the same or similar latent taint or tendency in their own inheritance, making this tendency doubly strong in the inheritance of the offspring.

—B. F. Richards.
Crawford.

A PIONEER PHYSICIAN OF THE ELKHORN VALLEY: DR. ALEXANDER BEAR.

The editor has noticed in the Nebraska lay press references to physicians who have been part of communities for twenty or thirty years as pioneer physicians. It is hardly fair to call such, pioneers.

Dr. Alexander Bear, now of Richmond, Virginia, located at Fremont in the fall of 1867. He is a native of Virginia, born in 1841, is a graduate of the Medical Department of the University of Maryland, 1860, and was a surgeon of the Confederacy in the civil war.

DR. ALEXANDER BEAR,
Richmond, Virginia.

The first case of importance to which he was called after locating at Fremont, was that of a man on Pebble creek, near the present site of Scribner, who had been injured in a sawmill and whose legs the doctor amputated. Early in 1871 he moved to West Point and while there Jim McMahon the only survivor of three hunters caught in a blizzard in Madison county was brought to him, 70 miles, in an emigrant wagon to have his feet amputated. McMahon and the Moon brothers had started on a hunt for deer on a promising morning in November, were overtaken by a blizzard and the Moon brothers perished, while McMahon drifted before the storm for miles and finally stumbled onto a sod house on Shell creek, near the present location of Newman Grove, and was saved although his feet had to be amputated (Chopart's amputation). A number of settlers in Wayne county, who had gone to the Indian reservation for wood, were caught in the blizzard and were badly frozen. After the lines of demarkation had formed Dr. Bear was called to Wayne county and spent several days going from home to home amputating fingers and toes.

Dr. Bear moved to Norfolk in 1872 and remained there in practice until 1909 when he removed to Richmond, Virginia, where he now lives—somewhat hampered by failing sight—in the enjoyment of declining years with his wife, children and grandchildren about him in the same home.

During early days in Norfolk, his practice extended all over north Nebraska. He was the pioneer surgeon of north Nebraska and much in demand as consultant with other physicians who came into the territory with the development of the country.

Dr. Bear always took an active interest in politics on the democratic side. He was elected to the state senate in 1874, (representing about all of north Nebraska), was a member of the Board of Regents of the State University in 1875, was the first member of the lower house of the legislature from Madison county, in 1876, was mayor of Norfolk a number of terms at different periods and was candidate for other offices. He became a member of the Nebraska State Medical Society at a meeting held in the residence of Dr. J. H. Peabody, Omaha, in 1869, and was one of the early day vice presidents. He was the first president of the Elkhorn Valley Medical Society.

EDITORIAL PARAGRAPHS.

By one of those unaccountable lapses that sometimes occur in individuals the month of the demise of the late Dr. Charles Inches and Dr. A. D. Nesbit was given as December: It should have read January.

Specializing in the almighty dollar is well illustrated in the recent case of a man who consulted an oculist. He paid cash for the refraction and was told that the glasses would cost $12.00 and would be sent to patient direct. They came with a bill for $1.35 attached.

Let us confess our optimism: The Nebraska medical profession is getting better, stronger, abler; the Nebraska State Medical Association is growing in importance and accomplishment and the Nebraska State Medical Journal———; well, it has grown eight reading pages larger in two years.

Speaking of opticians ordering glasses: Glasses are medicine for diseased eyes as digitalis is medicine for the diseased heart. Better have a pharmacist prescribe digitalis than a spectacle peddler glasses.

The Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, will be in session at the Congress Hotel, Chicago, March 5-7. Dean Cutter of the Nebraska University College of Medicine is on the program.

"Hygeia" a journal of individual and community health, to be published by the A. M. A. will appear shortly.

The Bureau of Health has felt it necessary to circularize the profession with the statement that specimens sent to the Bureau for laboratory examination must be fully prepaid. Evidently the bureau is no eleemosynary institution like most doctors are in their relations with the people among whom they live and labor.

A DIFFERENT VIEWPOINT ABOUT RADIUM

To the Editor:

In the January number of the Nebraska State Medical Journal I find an editorial by Dr. D. T. Quigley on "Radium in the Treatment of Cancer." I do not wish to dispute Dr. Quigley's authority on radium and its effects, but I would like to call attention to some points in his article not supported by facts. Dr. Quigley says that in early small uncomplicated and definite local cancers, radium is by far superior to X rays and that the latter can only be depended upon to remove the disease temporarily and that they are followed by a large number of recurrences. It is a well known fact that an epithelioma may be composed of either the basal-cell or the prickle-cell epithelium. Everybody with sufficient skill and experience will agree that the X ray will cure the basal-cell epitheliomata in practically 100 per cent with no recurrences. In the prickle-cell variety with early gland involvement and metastases surgical interference is strictly indicated. Radium is acknowledged to be of great value but only in a limited variety of cancers with special indications. In recent literature the general opinion of experts shows more and more a reversion from the exaltation of radium to a greater appreciation of the X rays especially of the recent models with deep penetration.

—Alfred Schalek, M. D.

THE SAN FRANCISCO MEETING

In connection with the forthcoming meeting of the American Medical Association at San Francisco, June 25-29, it is announced that round trip rates from Omaha will be $72.00 with stopover privileges at any point, going or returning, return limit Oct. 31.

Special trains and special de luxe tours are being planned by various organizations.

Great activity at San Francisco Convention Headquarters is evident from the mass of correspondence reaching this Journal.

Any inquiries about any subject whatever will be cheerfully answered if letter is addressed to Convention Headquarters, 808 Balboa Building, San Francisco.

THE AMERICAN CONGRESS ON INTERNAL MEDICINE

The Seventh Annual Clinical Session of the American Congress on Internal Medicine will be held in the amphitheatres, wards and laboratories of the various institutions concerned with medical teaching, at Philadelphia, Pa., beginning Monday, April 2nd, 1923.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Address enquiries to the Secretary, General Frank Smithies, 1002 N. Dearborn St., Chicago, Ill.

NO SYMPATHY WITH ABORTIONISTS?

The following resolution were unanimously passed by the Omaha-Douglas County Medical Society at its regular meeting; February 13, 1923.

Resolved:—

That the medical profession of Douglas County, as represented by the members of the Douglas County Medical Society, is keenly appreciative of the efforts of the County Prosecutor of Douglas County to uphold the honor and high standards of the medical profession.

And, be it further resolved that a copy of this resolution be forwarded to the County Prosecutor of Douglas County, and a copy be submitted to the Nebraska State Medical Journal for publication.

—J. M. Patton, Pres.,
Roy A. Dodge, Sec.-Treas.

RESOLUTION

Passed at Special Meeting of the Burt County Medical Society.

Jan. 15, 1923.

WHEREAS, The All-Wise Ruler has seen fit to permit removal, by what we call death, of our loved and honored member, Dr. Andrew D. Nesbit;

THEREFORE. BE IT RESOLVED, That we bow in sorrow, with a deep sense of loss sustained by our membership and the public, which he has so faithfully served. We almost seem to hear the whisper of the Great Physician in commendation, "Well done, thou good and faithful servant."

BE IT FURTHER RESOLVED, That a copy of this resolution be sent to the family and published in the local press; that a copy be spread on the minutes of our society and published in the State Medical Journal.

The Burt County Medical Society,
By The Committee.

REPORTS WANTED ON FUNGUS DISEASES OF MAN.

To The Editor: I am making a study of the occurrence of sporotrichosis, blastomycosis, and actinmycosis in Nebraska. I am taking the liberty of asking the profession, through the Journal, to be kind enough to send me abstracts of any cases of this nature that may have been under their observation. I shall consider it a great favor.

M. J. Wohl, M. D.,
517-518 City National Bank Bld'g.,
Omaha, Nebr.

THE SOCIETIES.

The Saline County Medical Society at the annual meeting Dec. 19, elected Dr. A. A. Conrad, president; Dr. H. W. Quirk, secretary-treasurer, and Dr. Wm. H. Pallett, delegate.

The Seward County Medical Society, January 24, elected Dr. B. E. Morrow, Seward, president; Dr. J. E. Meisenbach, Staplehurst, secretary-treasurer. Dr. J. S. Welsh, Lincoln, read a paper on Diseases of the Kidneys.

At a regular meeting of the Scotts Bluff County Medical Society, January 16, at Scottsbluff, Dr. C. H. Platz of Torrington, Wyoming, read a paper on malnutrition of children.

The Dawson County Medical Society at the annual meeting at Cozad, January 26, elected Dr. J. H. Fochtman, Cozad, president; Dr. C. H. Sheets, Cozad, secretary-treasurer and delegate.

The annual meeting of the Otoe County Medical Society at Syracuse, was largely attended by physicians from all over the county. Dr. Thos. Weeks, Talmadge, was elected president; Dr. S. S. Wilson, Nebraska City, secretary-treasurer; and Dr. C. W. Parks, Syracuse, delegate. A program for the activities of the society for the year was outlined and a banquet was served.

The Gage County Medical Society at a meeting in Beatrice, January 31, elected Dr. J. I. McGirr, president; Dr. J. C. Tucker. secretary-treasurer. Dr. A. D. Dunn, Omaha, gave an address on focal infection, illustrated with slides by Dr. W. L. Shearer, Omaha.

At the monthly meeting of the Dodge County Medical Society, January 24, at Fremont, the evening was taken up by discussions on preventive medicine and quarantine regulations.

The Madison County Medical Society held the monthly meeting at Norfolk, February 13. Dr. John D. Reid of Pilger, in a very interesting talk of forty minutes, gave his view-point of the management of labor. He was followed by Dr. T. H. Waters on the "Physiology of the New-born", and by Dr. G. A. Young, on "Abruptio Placentae."

The Ninth Councilor District Medical Society held a meeting at Grand Island, February 13. Dr. A. I. McKinnon was on the program for a paper on "Pelvic Surgery"; Dr. R. J. Bryson, Calloway, "Cults, Isms, and Fads"; Dr. S. R. Gifford, Omaha, "Common Problems of the Eye"; Dr. M. J. Wohl, "Fungus Diseases of Men." A six o'clock banquet was a feature of the meeting.

The Elkhorn Valley Medical Society held the midwinter meeting at Fremont, February 21. The program follows:

The Pyschology of Treatment in Tuberculosis, Miles J. Breuer, Lincoln; The Treatment of Acute Brain Injuries, G. E. Neuhaus, Omaha; An Interesting Breast Case, with Pathologic Treatment of Humerus, Wm. H. Pruner, Omaha; Correction of Deformities of the Thigh Following Fractures of the Femur. H. Winnett Orr, Lincoln; Presentation of Clinical Cases, H. C. Pedersen, Fremont; Common Clinical Irregularities of the Heart, Warren Thompson, Omaha; Diagnostic Significance of a Systolic Murmur, W. N. Anderson, Omaha; The Degenerative Heart, George Covey, Lincoln.

HOSPITAL NOTES.

Dr. A. Lynch, Fairbury, has purchased adjoining property with a view to enlarging the Fairbury hospital.

The Plainview General hospital, since its completion about six years ago under the superintendency of Dr. H. Melerian, has passed to the supervision of Miss Jesse Holly, R. N.

The Spencer hospital is being overhauled and refurnished and will soon be reopened by Dr. J. I. Limberg, present owner.

Dr. E. Arthur Carr, Lincoln, has purchased the Central States building and is planning to convert it into a sanatorium.

The Valentine Community Hospital, owing to lack of financial support, has been definitely closed.

NOTES ABOUT THE DOCTOR.

Dr. Adam Herney, formerly of Deshler, has located at Petersburg.

Dr. C. W. Pollard has been elected president of the University Club, Omaha.

Dr. H. P. Benjamin, formerly of Council Bluffs, Iowa, has recently located at Lodge Pole.

Dr. J. Ray Byrne, Omaha medical man, has just returned from a six months trip to European clinics.

Dr. Henry E. Lamb, Gooding Idaho, recently visited at Albion where he began practice some years ago.

Dr. E. W. Rowe, wife and daughter, were painfully injured in an automobile accident in Lincoln last month.

Dr. A. E. Mack, former well known Omaha obstetrician, is now located at Los Angeles, 716 Broadway Central Building.

Dr. John T. Mathews, age 70, for thirty-five years a practitioner in Omaha, has been found guilty of murder by committing an abortion.

Dr. Everett Angle, son of Dr. E. J. Angle of Lincoln, has become senior resident urologist of the New York Hospital, under the James Brady Buchanan Foundation.

Dr. Richard Thompson of New York City, visited his parents, Dr. and Mrs. T. D. Thompson, West Point, and Dr. Warren Thompson, Omaha, during the holiday season.

Dr. F. E. Coulter, neurologist who left Omaha last fall for California, has established a home in Santa Anna and has opened an office in 716 Broadway Central Building, Los Angeles.

Dr. E. Phole of Frankfort, Germany, first assistant to professor Dessauer of the University of Frankfort, gave a special course in X ray, deep therapy, etc., in Omaha in February.

Dr. and Mrs. J. M. Patton, Omaha, and Dr. and Mrs. C. Allenberger and son, Columbus, joined the American College of Surgeons' excursion party on a trip to South America. The party sailed from New York, February 9.

Dr. Lloyd Brummond Andrew, a Table Rock boy, who, since his graduation in Philadelphia last year, has been doing hospital work in Brooklyn and Philadelphia, accompanied by his bride visited in Nebraska during January.

Dr. Olga Stastny, Omaha physician, who for several years has been doing relief work in Europe, has taken charge of American refugees under the American Women's Hospital association on the island of Macronissi near Athens.

Dr. J. M. Banister of Omaha, gave the address at the State meeting of Sons of the American Revolution, held at the Lincoln Hotel on Febr., 22nd. Dr. B. F. Bailey has been president of the organization for the past three years.

NECROLOGICAL.

Dr. Daniel H. Muir, for many years and until five years ago, a practising physician of Lincoln, died at Muskegon, Michigan, the latter part of January. He was a brother of the late John Muir, the naturalist.

Dr. Peter Cavanagh of Schuyler, died of pneumonia, January 11, aged 68.

Dr. Gustavus Hinrichs, internationally known chemist, died at St. Louis the middle of February, aged 86. Dr. Hinrichs was professor of chemistry at the University of Iowa during the late seventies and early eighties of the last century. He was a graduate of the University of Copenhagen.

The death of Prof. William Conrad Roentgen, discoverer of the X rays, is announced from Munich.

BOOK REVIEWS

The Propaganda for Reform in Proprietary Medicines, Vol. 2, 1922. Containing Reports of the Council on Pharmacy and Chemistry and contributions from the A. M. A. Chemical Laboratory and from The Journal of the American Medical Association. Cloth. Price, $2.00. Pp. 603 with illustrations. Chicago: American Medical Association, 1922.

The present book is the second volume of the "Propaganda for Reform in Proprietary Medicines." The first volume ran through nine editions. The ninth edition contained (1) the most important reports of the Council on Pharmacy and Chemistry, (2) the reports of the A. M. A. Chemical Laboratory, and (3) those articles from The Journal of the American Medical Association which deal with the problems of proprietaryship in medicine and the furtherance of rational drug therapy. All of this material covered a period prior to 1917.

The present (second) volume contains similar material covering the period from January, 1917, to April, 1922, inclusive. Like Volume 1, this volume is divided into four parts:

Reports of the Council on Pharmacy and Chemistry:—This section presents the principles and rules which govern the Council in the examination of medicaments, contains articles and reports bearing on the work of the Council as well as the most important reports of the Council from 1917 to April, 1922, inclusive.

Reports of the A. M. A. Chemical Laboratory:—This, besides presenting the aims and objects of the Association's Chemical Laboratory, also outlines some of the Laboratory's work which is of special interest to physicians.

Contributions from The Journal: Proprietary Products:—This contains articles which have appeared in The Journal A. M. A. on proprietary preparations and their methods of exploitation.

Contributions from The Journal: Miscellany:—In this section are articles dealing with matters of interest to the medical profession but not coming strictly under the classification of proprietary medicinal preparations.

A comparison of the material that has appeared in Volume 1 of the Propaganda for Reform with that which appears in this volume will reveal the changing conditions in the proprietary medicine field. Many of the reports in the first volume brought out the fact that medicinal preparations were at that time foisted on the profession with false claims of composition; reports of this character are less conspicuous in the present volume. Many of the reports in Volume 2 deal with unwarranted therapeutic claims, especially those advanced for animal organ preparations, serums, vaccines, preparations for intravenous medication, etc. The present volume will also be found of interest in its portrayal of the changed conditions in proprietary medicines brought about by the World War.

The index in this new volume is, in effect, a bibliography, including references not only to articles in the book but also (a) to articles which appeared in Volume 1; (b) to articles on the same general subject in The Journal of the American Medical Association, and (c) to articles appearing in the annual reports of the Council on Pharmacy and Chemistry and of the A. M. A. Chemical Laboratory, but not printed in either volume of the Propaganda for reform in Proprietary Medicines.

This book is not only valuable for the information it contains, but it is also interesting. It shows up the technique of the artist in the sale of proprietary medicines, tells of his skillful word-pictures that are sent to the physician as "literature." It makes clear the work of the Council on Pharmacy and Chemistry, the A. M. A. Chemical Laboratory and The Journal of the American Medical Association in their several capacities as servants to the medical profession and as champions of rational medicine. The book should be in every physician's library, and more than that, should be within reach for convenient reference.

BOOKS RECEIVED

Webster's New International Dictionary. Regular Edition, Buff Buckram, indexed. Price $16.00. 400,000 vocabulary terms, 12,000 biographical entries, 30,000 geograhical subjects, 2700 pages, 6000 illustrations. Springfield, Mass.: G. & C. Merriam Company.

CHRONIC APPENDICITIS.

While surgery is the accepted treatment the results, John A. Lichty, Pittsburgh (Journal A. M. A., Sept. 9, 1922.) says, are frequently unsatisfactory. The comparative satisfactory results following operation for acute appendicitis are convincing evidence of the necessity for a more careful study of the more or less acute conditions of the abdomen. Prevention of chronic appendicitis is easier than cure. Hospital statistics bearing on the operative results of chronic appendicitis are unreliable, as the recovery from the operation is considered as synonymous with a cure. In certain cases a course of medical treatment is necessary before a cure is realized. In other cases, surgery may be contraindicated even though medical treatment affords only an approximate cure.

WASSERMANN VARIATIONS.

It is firmly believed, says Lester J. Palmer, Seattle (Journal A. M. A., Aug. 26, 1922), that the great variety of technics now employed throughout the country as complement fixation methods for syphilis undoubtedly accounts for much variation in reactions and consequent growing lack ofconfidence in a test of undoubted virtue. It is believed that a great deal of this variation would be corrected by a standardized technic. This standardized technic should be sufficiently sensitive to detect the laten cases, with small amounts of reagent in the blood, and yet not so sensitive as to interfere with specificity and permit of false positive reactions. The greatest sensitivity permissible with safety should be used. A second and possibly greater factor in the variation of results is the technician. The technician should report what the test tube shows, and the interpretation of the result rests entirely with the clinician. The requirements for technicians before they are permitted to perform complement fixation tests for syphilis should be very high, and the right to perform such tests should be regulated by proper authority. A third, and possibly the greatest, factor in the difficulties attending Wasserman tests today is the lack of knowledge of the profession at large concerning the interpretation of the laboratory report. A positive or negative Wasserman reaction should never be considered final when it conflicts with the clinical evidence, unless repeatedly checked through more than one laboratory. A weak positive reaction without clinical evidence should never be considered diagnostic of syphilis.

DIAGNOSIS, PROGNOSIS AND EARLY TREATMENT OF POLIOMYELITIS.

The conclusions presented by Robert W. Lovett, Boston (Journal A. M. A., May 27, 1922), are based on a study of 5,100 cases of poliomyelitis. No summary of this paper can be given, as it is at best only a summary of a large field. The important points are that the diagnosis must not be made on the history, but on the physical examination; that tenderness is a guide of great importance in diagnosis, prognosis and treatment; that early treatment consists of rest, and that, in the convalescent phase, muscle fatigue is the chief danger and muscle reeducation the chief reliance, and deformities prevent proper function and promote muscular deterioration. Lovett asserts that if these points are borne in mind, many patients can be spared much unnecessary deformity and disability, and we shall be able to take a much more hopeful view of the outcome of poliomyelitis.

"The kernel of truth in Coue's suggestion will be weighed, appreciated, and absorbed for future use, while the mass of unacceptable, unproven statements will be rejected as unscientific and denounced as untenable. The advantages will be measured against the disadvantages to individual development. A residuum of thought will be left for future analysis and newer syntheses. Before, however, the volatile essence of Coue's doctrines and theories is fully caught, a quickly forgetting world, signaling its next popular man with ideas, will already be saying, as he bids them say to pain; Ce passe, ce passe, ce passe."—Am. Med.

"It is interesting to note that the operating surgery of Keen's youth consisted of chiefly, "(1) amputation, most of which we can now avoid, (2) ligation of arteries, especially for aneurism and secondary hemorrhage, (3) occasional excision of joints—not seldom fatal, (4) removal of external tumors, such as cancer of the breast, (5) ovariotomy, but this was not done until the tumor was so large as to imperil life." And these operations were performed without the use of artery forceps, with instruments taken out of velvet-lined cases and employed without disinfection. This was in the days of "laudable pus," secondary hemorrhage, erysipelas, gangrene and sepsis."—Am. Med.

"It will not be resolutions by medical societies that will solve economic problems relating to the practice of medicine but the manner in which the great body of medical practitioners meet the problems confronting them."

"It must be borne in mind that physicians have two responsibilities: They have their personal duty to individual, private patients, and a broader obligation in their capacity as specially trained citizens. Their very knowledge of a thing, as vital to the community as its public health, constitutes them a special class, capable of affecting public opinion. It cannot be honestly said that in the possession of special knowledge they possess no particular responsibility about making special effort that society, as a whole, receive their benefits."—Am. Med.

"I claim nothing for it (Coue's method) that is in violation of common sense. I bring no challenge to the great profession of medicine or of surgery, and I make no claim in contravention to the basic ideas of any religious faith."—Coue.

"No one can dispute her contention that it is the function of the doctor to discover and announce the essentials for health and the prevention and cure of disease, nor is there any difference of opinion as to the necessity of making these facts known to the individual patient and to the world at large."

ANNUAL MEETING, LINCOLN, MAY 15-17, 1923

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, April, 1923. No. 4

CONTENTS

Page

Transposition of Viscera (Situs Viscerum Transversus). Report of a Case Without Transposition of the Usual Abdominal Reflex. John E. Summers, M. D. Omaha 117
Vitamins, H. M. McClanahan, M. D., Omaha, Neb. 120
Surgical Study in Vienna Today, J. W. Duncan, M. D., Omaha, Neb. 122
Lumbar Spinal Puncture and Cisternal Puncture, J. Jay Keegan, M. D., and T. E. Riddell, Omaha, Neb. 129
Chronic Endocervicitis, M. W. Flothow, M. D., Omaha, Neb. 132
Factors Influencing the Safety of Ether Anesthesia, R. M. Waters, M. D., Sioux City, Ia. 136
Syphilis of the Upper Air Passages, Barney M. Kully, M. D., Omaha, Neb. 138
Intussusception—Some Points in Diagnosis and a Plea for Earlier Recognition, Floyd Clarke, M. D., F. A. C. P., Omaha, Neb. 142
The Importance of a Pathological Laboratory in a Hospital, Michael G. Wohl, M. D., Omaha, Neb. 143

Page

EDITORIAL:—

Delegates 146
Dues 146
The Next Annual Meeting 146
Medical Legislation 146
A Danger to Medical Education 146
Honor Him to Whom Honor is Due 147
The Electronic Theory and the Oscilloclast 147
The American Puzzle 148
Case Management 148
The Teeth 149
Heredity in Cancer 149
The San Francisco Convention Session of the American Medical Association as a Starting Point for Various Tours 150
Physiotherapeutic Week in Kansas City 150
The Societies 150
Notes About the Doctor 151
Necrological 151
Books Received 151
Herpetic Ocular Lesions 151
Keratomalacia, D. D. Sanderson, M. D., Lincoln Neb. 152

TRANSPOSITION OF VISCERA (SITUS VISCERUM TRANSVERSUS). REPORT OF A CASE WITHOUT TRANSPOSITION OF THE USUAL ABDOMINAL REFLEX.

John E. Summers, M. D., Omaha.

Transposition of viscera, first described by Riselanus in 1649, is of rare occurrence. It is so seldom recognized that although a few men with great opportunities for clinical observation may see several cases in a lifetime's experience, the great majority of practitioners never see, or at least never recognize the condition. Occasionally the public is apprised of this rare occurrence through the agency of an overly ambitious doctor, plus his newspaper reporter friend.

A number of theories have been evolved concerning the development of congenital transposition; these are mostly understandable by special students of embryology and anatomy. Dr. C. W. M. Poynter, Professor of Anatomy in the University of Nebraska, College of Medicine, has done much experimental and investigative work regarding transposition of viscera. He says that when complete, a mirror picture of the normal visceral arrangement obtains. The condition is found as far down the animal scale as fishes. A number of theories of its causation have been advanced and a large amount of experimental work has been done to discover the mechanism, but so far about all that we can say is that there is a growth disturbance which prevents normal rotation. Apparently the time of this reaction is quite critical and may affect only a portion of the viscera; as a result we have cases of right aortic arch only, or of dextrocardia with or without right aortic arch, or, as Lochte(1) has shown, even a small part of the heart loop may suffer lack of rotation, or rotate in a reverse direction. Within the abdomen we may have any degree of the condition from one of complete reverse rotation to a failure of the distal gut loop to rotate. When partial situs transversus occurs the line of division is generally the diaphragm, so that we have no assurance that a case of dextrocardia will have a left-sided appendix or the countrary. In the abdominal conditions a reversal of the liver is not as common as a reversal of the colon.

The most exhaustive article upon the subject with which I am personally familiar is that of James Rae Arneil(2); in it will be found discussions of several of the different theories by investigators of distinction. The differences of opinion expressed are the best evidences in corroboration of what Dr. Poynter says.

It is a fact that heart dulness may apparently be absent in dextrocardia and, on the other hand, in apparent dextrocardia there may be, as in a recently reported case, "an impulse corresponding to a heaving "apex" beat in the fourth and fifth interspaces just internal to the right nipple, and no visible apex beat to the left of the sternum." In this instance the electrocardiogram and X ray demonstrated a normal heart in its usual left-sided position.

If for any special reason a well trained physician or surgeon should have occasion to make a careful physical examination of a patient's chest, he would with little doubt, recognize a dextrocardia, whether it were of congenital origin, or due to some pathological condition of the lungs, pleura, or mediastinum. The radiologist can add to the security of the diagnosis, and it is by the result of his findings that the relationship and position of the abdominal viscera can be reliably determined.

In abdominal surgery I do not know of an instance which has been recorded, in which a transposition of the abdominal viscera had been diagnosed before the abdomen was opened, although in several instances it was anticipated. Hans Kehr, in his monumental work, Die Praxis der Gallenwege Chirurgie, the most exhaustive, beautifully illustrated treatise published on this subject, reports one personal case, a common duct stone. The transposition of the liver was only recognized at operation, although the dextrocardia was apparent.

Carl Beck(3) reports another case in which a dextrocardia had been recognized before operation. The patient was operated upon first for the relief of symptoms supposed to be due to a floating kidney. This procedure did not afford an opportunity for an examination of the abdominal viscera. The patient not being relieved, a second operation was done and a number of gallstones removed. This operation disclosed a complete transposition of all the abdominal viscera.

In both of these instances the symptoms of gallstones in the common duct in the one case, and of gallstones in the gall bladder in the other, were not recognized as occurring in transposition of the liver.

Through the courtesy of Dr. Wm. J. Mayo, Dr. Waltman Walters, of the Mayo Clinic, has sent me a record of all the cases of transposition of viscera which have been found at operation at that Clinic. There were four patients, all women. Briefly narrated, they were as follows:

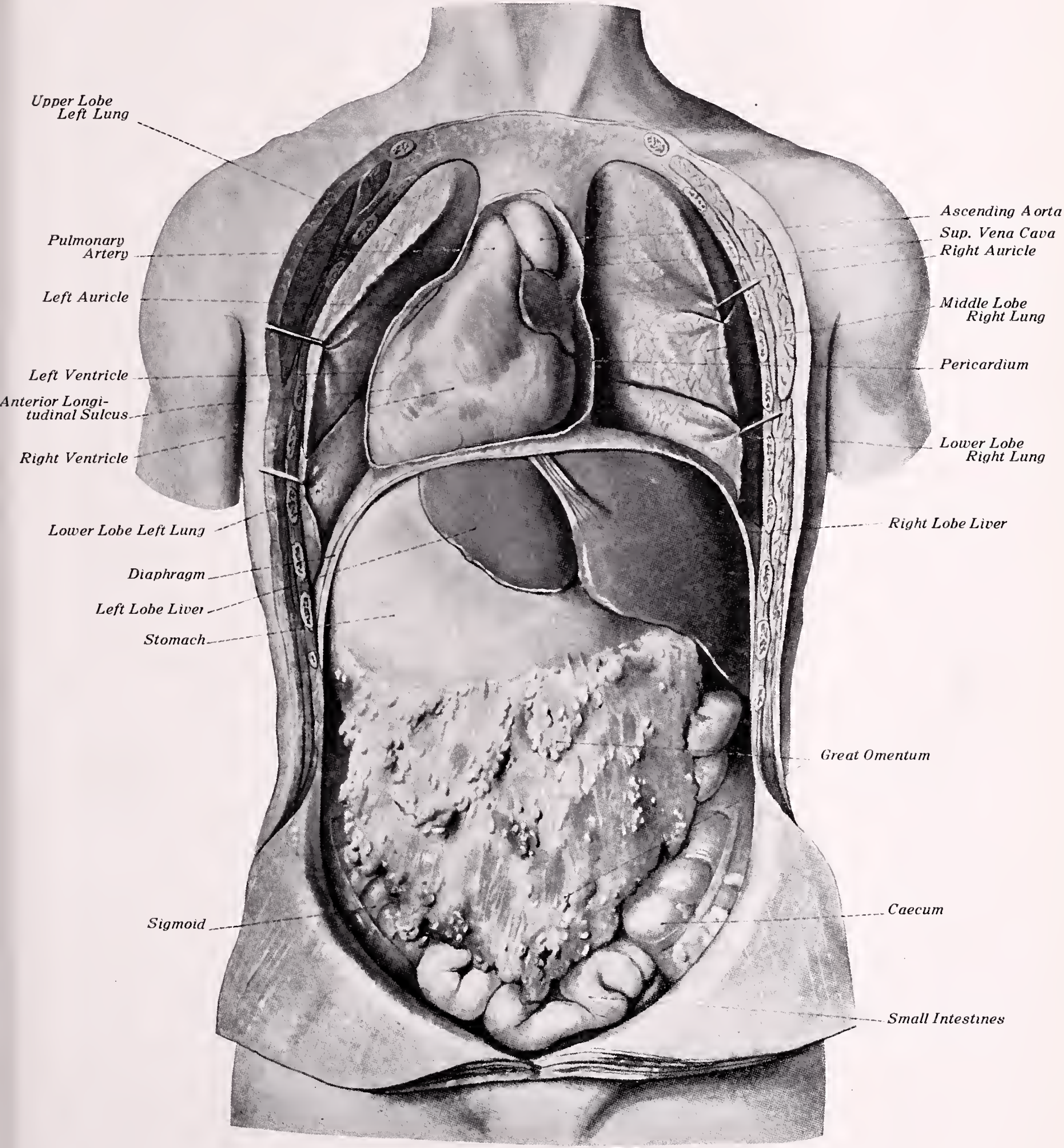
1. Age 29. Complained of colicky abdominal pain on the left side. A diagnosis of left hydronephrosis with constriction of the ureter below the kidney pelvis was made. Operation showed transposition of liver, gall bladder, spleen, and so forth. Plastic on pelvis of kidney and ureter.

2. Age 36. Complained of pain in upper abdomen. The heart was on the right side. Operation showed transposition of all viscera, and chronic appendicitis.

3. Age 37. Complaint—always sick since puberty, dysmenorrhea, irregularity of menses, migraine headache, and constipation. Present complaint—bearing down pelvic pain. Heart on the right side. At operation complete transposition of abdominal viscera was found, double hydrosalpinx, a left ovarian cyst, and appendicitis.

4. Age 45. Complaint—post-operative hernia. Had had left ovary and appendix removed elsewhere. Had gastric dyspepsia, with secondary complaint of eructations of gas and nausea. Operative findings showed complete transposition of viscera and duodenal ulcer.

Transposition of Viscera (Situs Transversus, after Hans Kehr, Gallenweg Chirurgie)



Illustrating Dr. J. E. Summers' Article

The writer has seen two cases of dextrocardia (traveling exhibitors) which were shown in large clinics, and is cognizant of two others which have been cliniced in Omaha.

Personal Case: Mrs. A. F., Age 21, a patient in the Clarkson Hospital, mother of one child eighteen months old. Present complaint—pain over the right lower quadrant of the abdomen. The history showed that the first attack of pain began six years ago. There were several attacks when the pain was general over the abdomen, with nausea and vomiting at times. She was free from attacks for three years, then had several more; during the last year they were more severe. Catamenia regular. She had had the usual childhood diseases, and as an adult rheumatism and influenza, but with no sequelae. There was nothing of interest in the family history. Her parents were living and well; she had one brother and seven sisters all well. Temperature and pulse were normal; heart not painstakingly examined but apparently normal; urine normal. Finger pressure over McBurney's point not only produced a characteristic right rectus reflex but also a drawing-up of the right thigh. Diagnosis—Subacute recurrent appendicitis. Operation, June 13, 1922: A right rectus incision disclosed the sigmoid flexure transposed to the right side of the abdomen, the caecum, with its attached appendix, freely movable, transposed to the left side of the abdomen. The pelvic organs were normal. The appendix was removed in the usual way. The hand introduced upwards disclosed a transposition of the liver; the heart could be easily felt beating against the diaphragm well over on the right side. Thoughtlessly, the spleen was not palpated. The direction of the stomach was from right to left. After operation, of course, it was easily discoverable that a dextrocardia existed, and the usual methods of percussion employed apparently disclosed the spleen absent on the left side and present on the right. When I opened this patient's abdomen the presence of coils of sigmoid was not at the moment recognized as part of a transposition of this portion of the intestinal tract. When a long sigmoid exists it is not unusual to observe its coils well over on the right side. In fact, I operated upon another young woman, a sister-in-law of this patient. the same morning, through a right rectus incision, and coils of a normally placed sigmoid were the first which presented themselves. Dr. Rogers of Ragan, Neb., who brought these patients to me, was present and, with the operating-room force, witnessed the findings. The pathological report confirmed the clinical diagnosis of appendicitis.

I have made this report for two reasons: First, because of the relative rarity with which one has an opportunity to observe transposed abdominal viscera in the living. Second, because it teaches a lesson: Every patient, the subject of a contemplated abdominal operation either of the emergency or elective type, should always have at least as careful an examination of the chest as would probably lead to the discovery of a dextrocardia. In an examination of a patient in extreme shock the presence of a dextrocardia would in all probability be overlooked. The successful outcome in all emergency abdominal operations depends upon their early recognition and as immediate an operation as is practicable. In the carrying out of the operation a safe but rapid technic of the type most suitable for the condition found must be employed. In order to do this most successfully a properly placed incision is essential; working through an improperly placed incision adds to the danger as does, also, the necessity of making a second incision. Therefore a dextrocardia having been determined in an emergency operation, the incision should be made on the supposition that a transposition of the abdominal viscera also exists. In an operation of election, a dextrocardia having been recognized, there should always be time for a proper radiological examination of the abdominal viscera, which should show their relationship and the site of the pathology. The determination of the proper location of the incision is thus evidenced. In any instance it must be remembered, as in my case, that although a transposition of the viscera is present the abdominal reflex may be what we are accustomed to elicit when the abdominal viscera occupy their usual normal positions. This supposition, however, must be based upon the theory that there has been no "transference of efferent stimuli in the cord." Pottenger, "Symptoms of Visceral Disease," states that unless there has been such a transference, "no matter where the appendix lies, this does not change the relationship of afferent and efferent neurons which produce the pain; consequently the pain is always transferred in the same way, and the neurons over which it can spread are limited."

BIBLIOGRAPHY.

(1) Lochte, Beitr. z. path. Anat., Bd. 16, p. 189, 1894.

(2) Arneil, Am. Journ. of the Med. Sci., 1902, p. 585.

(3) Beck, Annals of Surg., Vol. 29, p. 593.

Bacterium pneumosintes is the name given to the newly discovered influenza germ.

"The birth rate of the United States is now almost exactly double the death rate. This would mean an addition to our population by natural increase of from ten to twelve percent during the decade from 1920 to 1930."

VITAMINS.

H. M. McClanahan, M. D., Omaha, Neb.

For many years it has been known that certain diseases were probably due to the lack of certain food substances, as scurvy among sailors, scurvy and rickets in infants; indeed, these two conditions can occur together in the same infant. These conditions were described by Barlow of London. At that time they were thought to be identical. It is now known that these diseases were distinct in etiology and treatment. Indeed, the presence of scurvy and rickets in the same child is the most marked example of the absence of two vitamins from the diet. An animal may receive a diet ample in proteins, fats, carbohydrates, minerals and water, containing all the food elements, but if the vitamins are destroyed, the animal will develop certain morbid conditions. It will fail to grow and will ultimately die unless vitamins are restored to the diet.

"In 1897 Eijkman—warden of a prison in Java—noticed that prison fowls feeding upon rice left over from the prisoners diet, developed a set of symptoms similar to beri beri." These observations have been abundantly confirmed by a number of observers.

"In 1906 F. Gowland Hopkins, working in England upon the problem of growth of laboratory animals, advanced the theory of accessory food factors, as those substances needed for growth in addition to, and distinct from ordinary nutrients. In Japan, independent of the work of Funk, Zuzuki and his coworkers using identical methods as Funk, succeeded, also, in isolating a curative substance which they named Oryzanin. A group of British chemists, also, obtained a substance from yeast. This they called Torulin."

In 1911, Funk, working with rice polishings and yeast, isolated a substance which proved to be curative of beri beri. This he called vitamin, a compound of vital and amine. However, it is now known that amines are not vitamins, but the name still obtains.

Beri beri was the first disease to be recognized as due to food deficiency. It was believed to be due either to some infection or to a lack of protein in the diet. This disease occurs in China, Japan, the Philippine Islands, and in other countries where polished rice is the chief article of diet. The sailors in the Japanese navy, whose diet was chiefly polished rice, developed beri beri in large numbers. At one time one-third of all the sailors were incapacitated from this disease. When fish and vegetables and barley were added to the dietary this disease ceased to exist among the sailors in that navy.

For these reasons vitamin B or antineuritic vitamin was the first to be discovered, called antineuritic because this is the prominent symptom of beri beri. This original work gave impetus to other investigators, both in this country and in foreign lands. Most prominent in this country are McCullum, now of The School of Hygiene in Baltimore, and Mendel of Yale University. An enormous number of experiments have been made upon animals and upon birds, demonstrating beyond a doubt that the disease is due to the absence of vitamins, can be experimentally induced and by the addition of vitamins to the foods, can be promptly cured.

At the present time there are three recognized groups of vitamins called respectively: Vitamin A or fat soluble vitamin, the absence of which in the diet causes rickets and other forms of malnutrition; Vitamin B or anti nueritic vitamin curative of beri beri in men and polyneuritis in fowls. Also, has much to do with growth; Vitamin C or antiscorbutic vitamin, curative of scurvy. Vitamin A is fat soluble, Vitamin B and C are water soluble. Prof. Mendel of Yale University believes there are other vitamins to be differentiated. There may be a growth promoting vitamin, distinct from the antineuritic vitamin.

Vitamin A.

The fat soluble or vitamin A is found abundantly in the common articles of diet: Milk, cream, butter, eggs, cheese and in practically all the fresh leafy vegetables. The substance most rich in Vitamin A is cod liver oil. It is said to contain 225 times the amount of vitamins that is found in milk. In this connection, it should be remembered that refined preparations of cod liver oil lose much of their vitamins owing to the influence of heat. Age, also, impairs the vitamins of cod liver oil. At the present time, in the clinics, the raw expressed cod liver oil is used. Other articles of food as olive oil, lard and oleomargarine are entirely devoid of vitamins. Milk—both human and bovine—in the fresh state, contains vitamins A, B and C. An important fact to be remembered, however, is that vitamins are not developed in the animal economy, but are derived from the foods, hence, if the food be devoid of vitamins, then they will not be present in the milk. All vitamins are primarily developed in the vegetable kingdom, and in fruits, nuts and seeds. It is known that the cod fish is carnivorous, living upon smaller fish. These in turn upon marine lower forms of life, these in turn upon the alga of the sea. The most characteristic disease due to deficiency of the fat soluble vitamin is rickets in infants. While there are contributing causes, namely, lack of sunshine, it is certainly true that infants fed upon patent foods, condensed milk, and skimmed milk, will develop rickets. There are degrees of rickets, from slight beading of the ribs to marked deformity. Indeed, there is a pre-rachitic stage previous to any bone change. There is no doubt a race susceptibility to rickets. It is well known that this disease is more frequent among the Italians and negroes, even occurring in breast fed infants. Physicians generally recognize that cod liver oil, along with a balanced diet, is the sovereign remedy. Dr. Howland of Johns Hopkins in a long series of experiments, has induced rickets in rats by depriving them of fats, then without other change than the addition of cod liver oil to the diet they were promptly cured. It is the modern theory that the oil promotes the deposition of lime salts in the bone. A diet that will induce rickets is not deficient in lime. Deficiency of fat soluble vitamins leads to general malnutrition in adults and children, lack of vigor, dryness of the skin, and indeed, subnormal mental states. Deprivation of fat soluble vitamins leads to xerophthalmia both in man and animals. This vitamin is more susceptible to heat than either B or C. Boiling or pasteurizing milk destroys vitamin A. Infants fed on pasteurized and boiled milk readily develop scurvy. It is believed infants at birth have a reserve of vitamins as scurvy does not develop before the sixth month. In the first article written on scurvy by Dr. Wm. P. Northrup of New York, he stated that boiled milk lacked the element of rawness or freshness. We now know this is due to the destruction of vitamin A by heat.

VITAMIN B.

Vitamin B is found most abundantly in milk, also in certain of the nuts as peanuts, walnuts and in vegetables as tomatoes, beans, cabbage, carrots, cauliflower, lettuce, parsnips, peas, potatoes and spinach. Vitamin B is also found in fruit juices. It is present in whole wheat and barley, in the husk and in the germ, but is absent from white wheat flour. It is absent in muscle meats, but is present in the parenchymatous organs. It is well known that when a carnivorous animal kills another, it first devours glandular organs, often leaving the muscular structure untouched. As stated, the absence of vitamin B from the diet is the direct cause of beri beri, the chief symptom being a polyneuritis. Many interesting experiments on fowls deprived of vitamin B have been made. It is remarkable how quickly they recover when this vitamin is restored to their food. There is no question but that the deficiency of this vitamin leads to indefinite symptoms of ill health and impairs normal growth. The writer knows of a case, a gentleman who had vague pains, lack of energy, etc., he lived well but did not eat vegetables. He was advised to eat whole uncooked wheat for breakfast with the result that he promptly regained his normal vigor. The fad for eating yeast has a foundation, in fact, as this is rich in vitamin B. However, ample supplies of this vitamin can be had in a well balanced diet. Within the past year there has been reported a symptom complex in children, characterized by anorexia, cold and blue hands and feet, vague pains, and often skin eruptions called acrodynia, which is probably recovery results from a vitamin rich diet. In due to the absence of this vitamin. At least this country it is probable that more individuals suffer from a deficiency of vitamin B than from either A or C. This vitamin is destroved when vegetables are cooked with alkalies, as soda, or by prolonged cooking. Indeed, heat has a deleterious effect on all vitamins, but it requires a greater amount of heat to destroy vitamin B and vitamin A. Drying, also, impairs the vitamin B.

VITAMIN C.

The absence of vitamin C is the direct cause of scurvy, whether in infants or adults. Vitamin C is chiefly found in fruits: grape fruit, lemon juice and oranges; in vegetables: parsnips, spinach, potatoes, peas, lettuce, egg-plant, carrots, cabbage and most abundant in tomatoes—either raw or canned. Scurvy in infants is much less frequent than in former years owing to the fact that the majority of mothers appreciate the value of orange juice for infants fed upon the bottle. Dr. Hess of New York has shown that tomato juice will protect against scurvy, probably requiring a larger quantity than orange juice. Scraped raw potato is also an excellent preventive. For many years it was a mystery how scurvy could occur in a breast-fed infant. It is now known that if the diet of the mother has a deficiency of the foods containing vitamin C it will in time be absent in her milk. A number of cases of scurvy in breast fed infants have been reported. The writer has knowledge of one case in which the symptoms were well marked: Bleeding gums, cutaneous hemorrhage, tender swollen right thigh. This developed in the spring. The mother said her diet was coffee, meat, cooked potatoes, canned fruit. She did not drink milk, she ate no fresh vegetables. Her diet was corrected. The infant was given orange juice. Prompt recovery followed. Scurvy is practically eliminated among sailors and soldiers over the civilized world because of the absolute protective value of fresh fruits and raw vegetables.

The foregoing statements gathered from the modern text books warrant the following conclusions:

Modern methods of cooking, and sterilization of foods and milk tend to impair or destroy the vitamin. Hence, it is possible in the midst of plenty to be deprived of accessory food factors. Every diet for child and adult should contain both the element of freshness and rawness.

There are two valuable vegetables indigenous to Nebraska, namely, tomatoes and cabbage, both containing the various vitamins in the raw state. They are only slightly impaired in canned tomatoes. The cabbage can be kept throughout the entire year. It is a matter of common observation that children crave raw foods as the heart of cabbage, young onions, carrots, etc. It is now believed that children who eat dirt, sand and plaster—a condition called Pica—are suffering from some food deficiency.

Dr. Julius Hess of Chicago in experimental work on birds causing beri beri has determined that prepared vitamins are inadequate to either cure or prevent this condition. In a well balanced diet including the elements of freshness and rawness, will be found ample vitamin substances, both for prevention and relief of vitamin deficiency.

BIBLIOGRAPHY.

Sherman & Smith, S. L.: The Vitamins, 1922, Chemical Catalog Co., N. Y.

Funk, Casimir: The Vitamins, 1922, Williams & Wilkins, Baltimore.

Eddy, Walter Hollis: Vitamin Manual, a Presentation of Essential Data About the New Food Factors, Williams & Wilkins Co., 1921.

The writer wishes to acknowledge his indebtedness to M. Margolin—senior student in the Medical Department of the University of Nebraska—for valuable aid in searching the literature.

SURGICAL STUDY IN VIENNA TODAY.*

J. W. Duncan, M. D., Omaha, Nebraska.

(This paper was not written for publication. It was felt, however, that it might be of interest to the many readers of The Journal who visited Vienna before the war and to some of those who contemplate visiting the city in the near future.)

The American Medical Association of Vienna was organized in 1904. The objects of the Association are said to be "To promote social intercourse and the scientific advancement of its members." All courses were arranged and the fees therefor regulated by the Governing Faculty Body and members of the Association. All moneys due for instruction were collected and paid by the Secretary of the Association to the teacher on the completion of the course. Popular courses were often crowded and applicants entered by seniority if there were a waiting list. Adequate club rooms were provided, lecture courses were systematized and the organization fulfilled satisfactorily the purpose for which it was conceived until the outbreak of the war.

The old registry of the Association, which still remains in the new club rooms, shows a gradual decline in the number of American physicians visiting Vienna until finally the register closed in 1916. Before this date food had begun to be scarce in Austria and living conditions were bad. The fact that for two years following the outbreak of hostilities American physicians continued to seek instruction in Vienna indicates the high esteem in which the city was held as a center of postgraduate instruction.

---

*Read before the monthly staff meeting, St. Joseph's Hospital, Omaha, Nebraska, Sept. 21, 1922.

In 1920 and 1921 a few American physicians again appeared in Vienna seeking advanced study. Unfortunately, according to reports, many were not of the type that had developed the cordial relations with the Vienna medical faculty before the war. Boasting of America's part in the war, and ostentatious display of the American dollar did not help to dissolve the rancor that naturally, to a small degree, remained in the hearts of those who were our late enemies and who had then just been defeated in a conflict from which they are, even at this date, suffering severe privations. The offering of mere doles for instruction (the obligation to pay which was often forgotten) was met by the demand for fees which were in some cases exorbitant and which were in most cases considerably above pre-war figures.

The quarrel that developed culminated in the refusal of the Medical Faculty of the University of Vienna to recognize the American Medical Association as an organization. It insisted that classes in English be secured directly from the instructor by students as individuals, and not as members of the American Medical Association of Vienna. The officers of the Association and certain other members retaliated by systematic derogation of instructors and instruction and by the extolling of neighboring cities without Austria as far superior to Vienna for instruction. Finally a letter was forwarded to the Journal of the American Medical Association. The authority for sending this letter has not been clearly established. It alleged discrimination against Americans both as to fees and facilities for postgraduate instruction. Many American physicians studying in Vienna at the time felt that the letter was unfair in tone and largely untruthful in content. A reorganization of the association took place. At a meeting the old officers were given the privilege of resigning. Their refusal was met by a threat of general withdrawal and the organization of a body officered by men who it was felt would more properly represent the sentiments of the constituency. The requested resignations followed and the way was opened for a resumption of friendly relations between the faculty and the American Medical Association of Vienna. All demands made by the association were granted predicated only on the immediate forwarding of a letter to the Journal of the American Medical Association disavowing certain statements made in the communication which had previously gone out over the signature of the officers of the American Medical Association of Vienna. This letter was sent and at the time the writer left Vienna all apparent cause for disagreement had been erased.

HOSPITALIZATION.

For an intelligent estimation of the facilities offered by any city for medical study it is necessary that some idea of the extent and character of hospitalization be had. Before the war nearly all continental European governments extended financial support to institutions devoted exclusively to the bodily and spiritual welfare of their citizens. In some states, notably in Austria, the Church has been disestablished and government support has been withdrawn from certain small and unimportant hospitals. In Vienna a great majority of the hospitals remain under federal, state or municipal control. Of course, the wealthy class never has, and does not now, avail itself of the facilities offered by free clinics. These people are attended at their homes, or in so-called sanatoria or nursing homes, as they are known in England, which are equivalent to our small private hospitals. In public, or free hospitals, individuals are now permitted to pay varying amounts for accommodations. This secures choice as to room, nursing and food served. No one is urged to pay, however.

One is immediately struck with the immense number of hospital beds in Vienna. I have no knowledge of the exact number but it seems to me that it far surpasses any city of like size in our own country or in Europe and the maintenance of hospitals of such size and number would be almost an insupportable burden to a city or state many times the size of Vienna or of Austria. I cannot but believe that this drain on the exchequer of the state has something to do with the deplorable condition of the Austrian government's finances.

However, the reason for the large number of hospitals may be, and probably is, found in the fact that in antebellum days Vienna was the capital city and the medical center of the Austro-Hungarian Empire, a country containing about fifty million people. Sick and ailing came to Vienna from all over that territory. Now, with self determination each of these countries which were lopped off from Austria is a new state representing a governmental unit and each has established in its own capital a medical center. Notably this is true of Czecho-Slovakia with Prague as its capital and Hungary with Budapest as its capital. These cities are making rapid strides as medical centers though neither, of course, is yet to be compared with Vienna as to medical facilities. Despite war hatreds, national rivalries and ethnic incompatibilities one still finds the sick Hungar, or the "Kreigs gevund" Czech seeking treatment in Vienna.

It is to be wondered, perhaps, why, with the decrease in the population of the Austrian State the necessity still exists for the maintenance of the immense number of hospitals. There are probably three reasons. 1. The not inconsiderable number of war wounded still under treatment. 2. The disease still existent due to the under nourishment and nervous stress of war time. 3. The increase of the class which immediately seeks to become hospital boarders in times of economic distress. All of us know how easily one may keep our hospital wards full when living is high and work is scarce.

In America and England we are proud of our great free hospitals, built and maintained by private charity and public subscription. There is nothing, however, so inimical to moral fibre and so destructive to self respect as the reception of outright charity. It discourages candor and fosters deceit. This is reflected often times in the attitude of the nurse and ward surgeon toward the charity ward patient, an attitude entirely unworthy of a member of either humanitarian profession. It is to be noted that the patient in Continental government hospitals, in the present day at least, asks advice and treatment, not as a gift entailing an obligation he can not discharge, but as a right he has acquired as a tax payer who has contributed to the support of the institution of which he is an inmate. It seems recognized by the ward patient that examination and treatment are to be carried out by interns or assistants under the supervision of the chief, and that hospitalization involves, if necessary, the demonstration of his mental instabilities and corporeal infirmities for teaching purposes. I can recall only one patient, a gynecological case, who refused to submit to examination by students. I think it might be conceded that in this case all reasonable demands had been satisfied with three bimanual examinations which had been made in the space of ten minutes for the demonstration of acute pelvic inflammatory disease.

The hospital buildings vary as to architecture and modernity. Two extremes are shown by the Kaiser Jubiliam Spital and the Allegemeinen Krankenhaus. A noteworthy tablet adorns the hall at the main entrance of the former magnificent structure which commemorates the fact that this hospital was built in the fiftieth year of Franz Joseph's reign and that this monarch contributed the ground and ten million crowns to erect the buildings. At the time I left Vienna the latter sum amounted to three hundred dollars although at the normal rate of exchange it would have been two million dollars. Within one week American physicians spend much more in Vienna for instruction than, at the present rate of exchange, the Kaiser contributed to the erection of this hospital. This hospital seems a model of excellence in the matter of architecture. There are more than adequate ventilation and light, there is plenty of hall space, there is adequate plumbing, although private baths are not as plentiful as in some of our own hospitals. There is a building housing a prosectory and anatomical laboratory which is large enough to make a pretentious hospital in itself. It has wonderful equipment, even to a vat and a fat extracting benzine autoclave for the preparation of skeletons. The grounds are beautifully landscaped. There are five thousand beds in all in this hospital.

The old Allegemeinen Krankenhaus has little to recommend itself as far as location and buildings are concerned. The building is rather spacious, there is adequate ground space and the institution is associated with many of the best medical traditions of Vienna. It will be remembered by all American physicians, who have spent much time in Vienna, as a center from which medical activities radiate. In 1914 a new large building, to be called the New Allegemeinen Krankenhaus, was begun near the Poliklinik. It was intended to evacuate the old premises and dismantle the old building. Of course, it could not be completed during the war and there have not been sufficient funds available since so it is unfinished, as it must remain, until Europe forgets war and revenge and turns to works of peace and mercy. This unfinished building is occupied, in part, by an eye clinic.

The hospitals on the whole are kept clean, some scrupulously so, others clean enough to pass casual inspection. It is to be remembered that in all of these hospitals there are a number of male and female walking patients who are willing, or even eager, apparently, to aid nurse or orderly in keeping their apartments clean. So the problem of cleanliness and help is not so acute a one as it is in some of our exclusive hospitals where the convalescent sitting male is not able to lace his shoes until he is fit to play tennis, or milady can not stir her own chocolate until she is able to taxi to the theatre. There seems to be adequate food. Clean bed linen, urinals, bed pans, etc., are scarce.

The nursing is done largely by lay women, in the strict sense of the term. On the Continent, outside of Prague, the nursing of the sick has not reached the elevation of a profession. There is no regular or systematic training nor is there any course of lectures given to nurses. Remuneration is made by the state. Additions are made to the staff as demanded by vacancies, chiefly through death or marriage. No standards as to preliminary educational requirements are set. Usually the women are young. The brightest and most apt are chosen for laboratory or operating room work. One is struck by the fact that the nurse does not, as a woman, command the respect that we in America think is due her, or that would be accorded her in other fields of less worthy endeavor.

With few exceptions religious organizations do not have complete control of nursing establishments. In most of the hospitals the religious sisters are interspersed with women not in habit. Surgeons will be interested to know that in the larger hospitals the operating room service is most excellent. This, I think, is not due to any unusual capability on the part of the operating room staff but because of long, arduous and rigorous training where discipline is military in character and penalties severe. I have often drawn a mental picture of the temperamental European surgeon operating in a small hospital with a student for an assistant and a probationer for a table nurse, or in a farm house with the husband for an anesthetist and a well intentioned neighbor lady for an assistant.

Placards in all hospitals urge the necessity of the conservation of gauze and dressing materials of every kind. Comparison of money values is worthless when based on the paper currency which is inundating Central Europe but an idea of the economic disturbance can be gathered when it is known that a two inch, ten yard, gauze bandage now costs forty crowns. On this amount the prewar university student could have lived comfortably for one month. For the price of two such bandages, or eighty crowns, he could have dressed richly, dined sumptuously and entertained lavishly. However, if we except catgut and rubber gloves, there seems to be no real shortage of material in the operating room. Most of the clinics do not use catgut except on the mucous layer in intestinal anastomosis and in certain vaginal operative work. Silk and linen are used almost exclusively. Surgeons say the cost of catgut is prohibitive and the quality doubtful. Rubber gloves are very expensive and are used until patched to a degree that makes them unrecognizable as anything but mittens. Gloves of local manufacture are without form, proportion, or elasticity. There are a few gloves of American manufacture. Many of the surgeons wear cotton gloves. Many gynecologists work bare handed.

Surgical instruments seem available in plenty and are of good quality. Many of those now in use in Vienna were furnished by the American Red Cross after the armistice. Laboratory equipment seems adequate both as to material and as to technicians provided. Most of the latter are skilled to a degree that makes them invaluable in the positions they occupy, although their recompense assures them less than a bare existence. Many of the stains come from Germany and are, to the Austrian, very expensive. Since I left Vienna the Austrian crown and the German mark have vied with each other in their race to join the Russian ruble, and it is difficult to tell whether the disproportion between the German and Austrian currency has been lessened or increased.

STUDENTS AND STAFF

In the University of Vienna there are about eleven thousand students. Approximately five thousand of these are studying medicine, not including postgraduate students. Of course, the majority are, by birth, German speaking. Many, however, are Czech, Hungarian, Polish, South Slav, Russian, Italian and a few are from the small Balkan countries. There are to my knowledge, based upon inquiry, no Germans, Spanish, English or Irish. Naturally, those who come from without the Austrian boundaries will return to their native countries but this leaves an enormous number of native Austrians to be placed, surely too many to be absorbed within the confines of that small country. Since the war the necessity has arisen, in most cases, for the young Austrian physician to become self supporting. The acquisition of an independent fortune through inheritance or a matrimonial alliance is hardly possible now since most of the large fortunes in Austria were swallowed up during the war through confiscation or forced loans in Austro-Hungarian government bonds which, of course, are now worthless. Inquiry as to future plans among young undomiciled Austrian physicians and students shows that a great majority of them are looking to Russia as a field of unusual opportunity "as soon as the Bolsheviki are overthrown." One is impressed by the large percentage of female medical students. Observation on different occasions in various clinics warrants the estimation that ten per cent of the students are women. Some are of the old nobility, but their instructors and fellow students seem to accord them no unusual consideration or privileges because nature has made them women and the accident of birth made them countesses and marquesses. Though marriage be desirable the womanhood of war torn Europe realizes that there are not enough males to supply mates for all and it is seeking to replace marriage by other careers. The better class enters professions, perhaps religious, perhaps others which demand less sacrifice and offer more material recompense.

When he has passed his final examination the medical student in Vienna gets the degree of Doctor of Medicine but to distinguish him from the dentist, barrister, theologian or philosopher, who is also known as doctor, he is known as a medical doctor, or an "Arzt Doktor." If he secures a hospital appointment equivalent to an internship he is known as a Hospitande. Promotion by the University makes him an Assistant, then a Dozent, then a Privat Dozent, then a Professor Ordinary, then a Professor and finally he may become a Hofrat, or Geheimrat Professor. He prefers not to be addressed as "Doctor" but as "Dozent" or as "Hofrat Professor." These degrees are conferred by the University and do not necessarily interlock with contemporaneous hospital appointments. A man may be a professor at the University and be only an assistant at a hospital clinic, or he may be chief of a department on a hospital division and be only a Dozent at the University. However, equivalent degrees of promotion by university or hospital are the rule. In most cases apparently they are secured by either long hard work or by great brilliancy of intellect, though oftentimes seniority smothers genius.

The Hospitande, or interne, and usually the assistant, put in full time at their hospital appointments. These appointments carry a salary that now amounts to a mere pittance with board and room and laundry. An assistant at the Eiselsberg Klinik is paid sixty thousand crowns monthly. This amounts to about one to three dollars depending on the rate of exchange. The way to advancement, except by preferment, is extremely slow. One assistant whom I knew, a man of unusual gifts, who spoke four languages and who is an excellent surgeon, has been an assistant in the Eiselsberg Klinik for ten years. However, four of these ten years were spent in a Siberian prison camp, where he learned to speak Russian, his fourth language, though this addition to his linguistic register did not augment his sixty thousand crowns monthly salary.

The living quarters of the resident surgeons are passably good or execrable, depending on whether they are quartered in new or old buildings. Few of them that I observed have running water or sanitary conveniences.

TEACHING

With few exceptions the instructors seem to have unusual teaching ability. Practically all give evidence of having carefully prepared their lectures before presenting them. Most of them speak English fluently. Nearly all of them speak it well enough to put their material clearly before an English speaking physician. The few who do not speak English are learning it because of its monetary value to them. Those who teach in English in one lecture hour make from two to four weeks hospital salary. Aside from this consideration there is a desire, as a matter of pride in the institution to which they belong, to make Vienna once again the Mecca for American physicians seeking postgraduate instruction.

The American marvels at the rapidity with which the Continental European acquires a knowledge of languages. A multiplicity of tongues within small boundaries and increasing facilities for transportation have induced the educated European to make a virtue of necessity and to acquire at least two or three modern languages.

The teaching is done at various places although most of it centers around the Allegemeinen Krankenhaus. Didactic work is given either at a hospital or at the lecturer's office or home, which are usually combined. The clinical demonstrations are given at various hospitals and outpatient dispensaries. The hours are usually regulated to suit the convenience of those desiring the work though necessarily the latitude allowed is not great by those instructors who are very busy. The number in a class varies, three to twelve usually representing the minimum or maximum. Fees vary from three to five dollars per hour. This is divided among the number taking the work. Some of the specialists of world renown, such as Hyak, Dimmer, Ruttin, Tandler, etc., charge from ten to fifteen dollars per hour, but usually it is found that these men have assistants quite as good for instruction who are available at a charge of from three to five dollars per hour.

Seniority among instructors in the allocation of classes given is the rule. No assistant may give a class when his chief is available without the latter's permission.

SURGICAL WORK

All branches of surgical work offer opportunity for postgraduate instruction. For general surgical instruction the Eiselsberg Klinik is perhaps best organized and has the greatest number of staff men who are good teachers. The Hochenegg Klinik is very good. Both of these are at the Allegemeinen Krankenhaus. For orthopedic instruction the Lorenz Klinik offers excellent work by Lorenz himself and by his assistants.

Professor Lorenz returned from his last visit to the United States during my stay in Vienna. I saw him immediately after his arrival. He was courteous, and kindly to American physicians. At a Fourth of July celebration (the first since 1914) held by the American physicians at Baden, a pleasure resort just outside of Vienna, to which the Vienna medical faculty was invited, this charming old gentleman made a most happy and felicitous speech in English of such correct diction and quaint phrasing that it brought forth expressions of admiration from every one.

The regrettable circumstances connected with Professor Lorenz's recent visit to America are familiar to us all. But opportunity to become acquainted with the facts leading to his trip to America indicates his good intent and laudable purpose. His visit was seized upon by unscrupulous European propagandists to further their own ends. He was met at the pier by representatives of the New York yellow press whose ethics permits it to fabricate interviews and equivocate truths. One has only contempt for those who seek such publicity and only pity for those who suffer it.

The Spitzka Klinik is said to be excellent for orthopedic teaching.

Urological work in abundance can be secured either at the Rubritius Klinik in the Poliklinik or at the Blum Klinik in the Wiedner Spital. Two or three American clinics offer superior facilities for urologic instruction to anything I found in Vienna.

In pre-war period it was possible for the American physician on payment of a fee to a chief of clinic to secure operative work of all kinds. This opportunity has been largely curtailed, and such operations as are not performed personally by the chief of the clinic are done, with few exceptions, by his assistants who will not permit their prerogatives in this respect to be usurped. But if this opportunity no longer exists there still remains, for operative demonstration, an unlimited number of cadavers at ridiculously small fees at the Jubiliam Spital. Here there is an average of thirty deaths daily. Most of these cadavers are not subject to autopsy, because of the desire of the University to retain some material for teaching surgical technic and because mostly the deaths are due to senility or other causes of little pathologic interest. For twenty cents each, including a tip to the Diener, one can secure as many bodies a day as he wishes. It is only stipulated that under no circumstances are the face or hands to be touched. A law, for which I believe the Empress Maria Theresa deserves credit, requires that the bodies of all patients dying in public hospitals be submitted to dissection or autopsy; so it is unnecessary to cajole or persuade the living relatives to grant the coveted privilege of anatomic investigation.

GYNECOLOGY

The two large gynecological clinics are the First and Second Universitats Frauen Kliniks. One, the old Schauta Klinik, is under the direction of Peham and the other, the old Wertheim Klinik, is under the direction of Kermauner. The buildings housing these clinics are relatively new, large, clean and airy. The clinical material is abundant in both and the instructors with few exceptions are excellent. Courses in gynecological bimanual diagnosis are given in both clinics, the one by Werner in the Kermauner Klinik being unusually excellent. For four dollars per hour four students can daily examine six patients. The established diagnosis is withheld until all have examined the patient. A quiz is then held by the instructor. The diagnosis and differential diagnosis are discussed and if the case is operable the class is privileged to witness the surgery. I know of no work given in surgery or its broad specialties that is more valuable.

One is immediately impressed with the fact that Vienna gynecologists are extremely conservative in their view of operative indications. They do not operate for cervical niches, movable retropositions, cirrhotic ovaries, varicoceles of the broad ligament or pelvic pain without anatomic or pathologic basis. Pelvic inflammatory disease of gonococcal origin is rarely operated upon and recurring disease of the same type only if there are three or four attacks. Post-abortal or puerperal infections are treated very conservatively excepting in extreme cases in which radical hysterectomy is carried out.

For carcinoma of the cervix uteri the advised operability seems beyond that in most countries but common and careful application of the Wertheim technic for hysterectomy warrants broadening of the operative indications. Very few women within the child bearing age are operated upon for the various degrees of cervical or perineal lacerations. For nearly all cases of prolapse or cystocele the interposition operation is carried out at the Kermauner Klinik.

Seldom will one visit a clinic where he will find such loyalty to the memory of, such tribute to the precepts of, and such homage even to the eccentricities of one departed as in the old Wertheim Klinik. The ground is so hallowed by tradition that it sometimes seems to American observers that Wertheim's successors are engulfed by it. No gloves are worn because Wertheim wore none. The rectum is not covered because it was never covered when Wertheim worked, etc. Because of the teaching of Tandler the anatomist, that the uterine suspensory ligaments are not ligaments and do not suspend the uterus, Vienna gynecologists perform very few of the so called uterine suspensory operations. It is interesting to know that the old ventral fixation is used as often as any procedure for the reposition of the uterus in women past the child bearing age. In most of the clinics ether anesthesia is used; in some, local anesthesia by the infiltration method. In the Kermauner Klinik the great majority of cases are operated upon under spinal novocain anesthesia, which appears to be very successful.

The use of X ray and radium in gynecological conditions varies greatly in the different clinics. The latitude given the radiologist in the treatment of surgical conditions testifies to the desire of the surgeon to establish the limit of value of this form of therapy. The Peham Klinik goes to one extreme, that of optimism and the Wertheim Klinik to the other, that of pessimism in this therapy. Other clinics in the city strike a happy medium. Gradually, I believe, in all Europe with the development of new and powerful Roentgen machines and with the application of biologic laws in radiation, radium is being displaced by the X ray except in certain regions where anatomy or physiology demands accurate localization of the radiation not to be obtained except by radium.

Of eye, ear, nose and throat study I have little knowledge. However, all American physicians who are taking these specialties, and they represent over fifty per cent of the total number in Vienna, are enthusiastic about the opportunities offered them. During my stay in Vienna there reached the city thirty-six men from the University of Pennsylvania to take this specialty.

Of the various other specialties, I am not competent to speak. One is impressed with the immense number of autopsies held in the city daily. In every large hospital the Prosectory or Anatomische Institute is a place of great activity all day long. At the Allegemeinen Krankenhaus one can see within a morning from twenty to thirty autopsies. Little or no English is spoken here. The ages of the cadavers vary from four months intrauterine to octogenarians. Accurate protocols are kept and the work seems very thorough.

To all who knew Vienna before the war and to all who have visited the city since there is something uncanny in the atmosphere created by its lovable people in their effort to maintain, in the presence of distressing poverty and economic chaos, its old time position as a center of culture and learning. To date, a fantastic finance has delayed the inevitable day when a worthless currency will force a realization of the immutability of economic laws. Vienna was built, and its people nurtured to be, the inhabitants of the capital of the Austro-Hungarian Empire—a powerful monarchy of fifty million people. This Empire is no more and the Viennese can no longer lay tribute on the Czech and Hungar and Slovak peasant to maintain the old time glory of his beautiful city.

There are now six million people in the Austrian Republic and two million five hundred thousand of these live in Vienna, a city of few industries with a population untrained to hard labor. But for the moment we are interested chiefly in the future of Vienna as a graduate medical center. There has already occurred, since the dismemberment of the Empire, a great falling off in some of the clinics; Ruttin, the aurist, says in his clinic, to the extent of forty per cent. I found in my own work a plenitude of material of all kinds but several factors have tended to maintain this beyond what pending circumstances will warrant in the future. These circumstances are:

1.—War wounds and complications are common.

2.—Surgical tuberculosis and allied surgical infections dependent on malnutrition during and following hostilities.

3.—Difficult living conditions with consequent wide hospitalization.

4.—The desire on the part of the medical faculty to re-establish Vienna as a postgraduate center and the utilization of all available clinical material.

5.—The continued influx to Vienna of sick and ailing from outlying countries.

Gradually, with the establishment of adequate clinical facilities in those countries, that were formerly a part of the old Empire, will come a reduction of hospital beds and a curtailment of expense to a degree compatible with the sound finance of a self supporting state. However greatly this may affect medical teaching in Vienna it is to be hoped it will not mean the disappearance of the gentleman of kindly disposition, charming manner, altogether lovable qualities and high scientific attainments who represents not only the best, but the majority of our profession in Vienna.

LUMBAR SPINAL PUNCTURE AND CISTERNAL PUNCTURE.*

J. Jay Keegan, M. D., and T. E. Riddell, Omaha, Neb.

The following report is based upon fifty lumbar punctures and three hundred cisternal punctures performed chiefly at the University Dispensary and the Douglas County Hospital. Most of the patients were ambulant, the punctures being performed for diagnosis. Detailed account of these punctures will be preceded by a brief discussion of the difficulties and dangers involved in the two procedures, with a description of the technique of cisternal puncture.

Lumbar spinal puncture is well established as a fairly safe method of obtaining cerebrospinal fluid for diagnostic purpose. Yet all who have made many lumbar punctures appreciate the difficulties encountered and have had the disagreeable experience of producing prostrating puncture headache. Characteristically this headache begins fifteen minutes to one-half hour after the patient first arises, and is associated with pain and dizziness to a degree that makes it almost impossible to remain erect. The symptoms are somewhat relieved by lying down but recur at each attempt to rise and persist thus about a week, when they usually abate without serious consequence.

---

*From the University of Nebraska College of Medicine, Omaha.

This headache has been attributed to the withdrawal of too much fluid, but it occurs less frequently when the cerebrospinal fluid space is drained as empty as possible and has occurred following a dry tap. The most plausible explanation has been advanced by MacRobert.(1) He attributes the headache to the negative intracranial pressure produced by the continued escape of cerebrospinal fluid through the opening left in the inelastic dura after the puncture needle is withdrawn. This escape is increased by the force of gravity in the erect position, there then being a column of fluid 24 inches to 36 inches in height. The fluid escapes into the loose epidural space which surrounds the spinal cord. Pressure within this space often gives rise to ascending nerve-root pains associated with the lumbar puncture headache.

It has been found that by keeping the patient in the prone position with the foot of the bed elevated for twenty-four hours after lumbar puncture the incidence of headache can be lessened but not entirely obviated. However, it is not always possible to follow this rule for many dispensary cases are not willing to leave their work the necessary twenty-four hours and a bed is not always available when a puncture is desired. The result is that either the indicated puncture is not made or the time in bed is shortened to a few hours and the incidence of disabling headache increased.

This situation existed at the University Dispensary and seriously handicapped the diagnostic service in the clinics for syphilis and nervous and mental disease. In an attempt to solve the problem two beds for day use were installed at the Dispensary. Fifty lumbar punctures were made in these beds during the course of a few weeks and the patients kept prone as long as possible, from two to eight hours. The incidence of puncture headache in this group was ten per cent. Three of these occurred in close succession and were of such severity that they discouraged continuance of the practice.

At this time it was decided to undertake cisternal punctures, following the technique of Ayer(2, 3) who first advanced this puncture as a reasonably safe procedure in careful hands. As a prerequisite qualification he advised exact knowledge of the anatomy of the region involved and post-mortem practice before undertaking the puncture on the living.

The technique of cisternal puncture is not difficult in entry as there is less bony obstruction than in lumbar puncture. The ordinary 18-gauge lumbar puncture needle is inserted in the neck, as shown in Figure 1, directly over the prominent spine of the second cervical vertebra. It is directed upwards in the midline towards the level of the external auditory meatus and pierces the dense occipito-atlantal ligament between the occipital bone and the first cervical vertebra. It enters the subarachnoid fluid space in the angle between the cerebellum and the medulla. This space is called the cisterna magna, hence the name cisternal puncture.

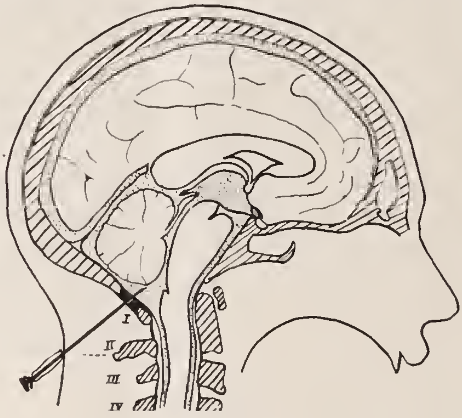


Figure 1.

The distance from the skin to this fluid space varies from three centimeters to six centimeters according to the thickness of the neck. As the needle enters the dense occipito-atlantal ligament a characteristic leathery resistance is felt and furnishes a very valuable guide to the approach to the fluid space. Often the puncture of the dura on the inner side of the ligament is felt as a membranous snap and coincident with this the patient may complain of a sharp pain.

Practice and judgment, with accurate measurement and control of the distance the needle is inserted, are very necessary. These are learned only by experience, but a good rule with women or thin men is never to insert the needle beyond five centimeters in depth and in no case beyond six centimeters. Small file marks are made on the needle at the distances of five and six centimeters from the point. A guard is placed at the desired depth to prevent plunging of the needle and to furnish a more evident guide. The simplest guard available is the ordinary necktie pin holder that can be obtained at haberdashers. The depth of the fluid space after the needle pierces the dura is 1.5 centimeters. Beyond this the needle would enter the medulla or pons at about the level of the seventh cranial nerve nucleus. The needle may enter the vermis of the cerebellum before the pons is reached and disagreeable bleeding occur.

Since instituting cisternal punctures at the University Dispensary two hundred have been performed without serious consequences. The greatest advantage gained over lumbar puncture has been the comparative freedom from the severe type of lumbar puncture headache. In fact there is so little likelihood of after effects that in the last one hundred and fifty cisternal punctures the patients have been permitted to arise almost immediately and return to their usual activity. This has greatly simplified the handling of ambulant patients and the safety of the procedure in experienced hands warrants its continuance as a practical method of obtaining cerebrospinal fluid in patients who cannot spend the necessary 24 hours in bed for spinal puncture.

The suggested explanation of the absence of severe headache after cisternal puncture is that the dura is in close contact with the inner surface of the occipito-altantal ligament and hence there is no loose epidural space into which the fluid may escape as in the lumbar region of the spinal cord. The gravity pressure also is less since the fluid level is only six inches above the base of the skull while it is from 24 to 36 inches above the lumbar region in the erect position.

Cisternal puncture is not entirely devoid of minor disagreeable effects. The commonest complaint is moderate soreness or stiffness at the site of the puncture, lasting a few days. Bloody fluid was obtained two times during the early punctures. This was attributed to insertion of the needle into the vermis of the cerebellum. One of these cases was a suspected encephalitis with cerebellar symptoms in which a lumbar puncture was of questionable safety. Evidently the cerebellum was forced against the dura and little fluid could be obtained. Two weeks later the patient died rather suddenly and autopsy showed a gliomatous cyst in the left lateral lobe of the cerebellum. The other case of hemorrhage complained of a rather severe headache lasting three days, but she was able to continue about her work and recovered completely. Two other patients complained of moderately severe headache, dizziness and pain in the back of the neck. Neither was confined to bed by the discomfort although considerably disturbed by the symptoms. Both recovered completely in a few days. Their headache was not relieved by lying down and its severity was not comparable to that of the familiar lumbar puncture headache. In the County Hospital series, one patient developed a slight spasmodic contracture of the face muscles on one side which disappeared entirely in three days. This suggested trauma to the nucleus of the seventh cranial nerve. Another case of advanced paresis with cardiac decompensation, on whom cisternal puncture was performed without difficulty or bloody fluid, died suddenly ten hours later while walking from the ward. There had been no symptoms up to this time and the death could be explained only by one of two incidents; either the reduction of the increased fluid pressure led to later rupture of a cortical blood vessel, which is recognized equally as an element of danger in spinal puncture, or the death more probably was due to sudden cardiac failure as such cases are subject to. Unfortunately an autopsy was not obtained in this case.

Cisternal puncture should never be undertaken as lightly as lumbar puncture often is done by the inexperienced, for sudden death is possible through entrance of the needle into the medulla or pons. Having seen the wild and unreasonable depths to which exploratory needles often are inserted by the inexperienced we would hesitate to recommend cisternal puncture to anyone who is not fully cognizant of all the difficulties involved and who has not perfected his knowledge of anatomy and technique on postmortem material.

At the present time several hundred cisternal punctures have been reported from other clinics without serious consequences. The indications for its use have been detailed by the various writers. Suffice it to mention here a few of the most important indications. In spinal subarachnoid block by inflammatory exudate cisternal puncture may be resorted to in order to drain the higher infected meninges or to inject serum. Injections made even in a normal lumbar fluid rarely go much beyond the foramen magnum. The greatest diffusion of injected fluids occurs from the cisternal region and this suggests the use of cisternal injections in the treatment of central nervous system lesions above the spinal cord.

In conclusion two points should be emphasized, first that cisternal puncture has become a practical method of obtaining cerebrospinal fluid in selected cases, and second that it should not be undertaken carelessly and ignorantly by the novitiate.

BIBLIOGRAPHY.

(1) MacRobert, R. G. — The Cause of Lumbar Puncture Headache. J. A. M. A., 1918, 70, 1350.

(2) Wegefarth, P. Ayer, J. B. and Essick, O. R. —The Method of Obtaining Cerebrospinal Fluid by Puncture of the Cisterna Magna. Am. J. Med. Sci., 1919, 157, 789.

(3) Ayer, J. B.—Puncture of the Cisterna Magna. Arch of Neurol. and Psych., 1920. 4, 529.

CHRONIC ENDOCERVICITIS.

M. W. Flothow, M. D., Omaha, Neb.
(From Gynecological Department, Creighton University College of Medicine).

Chronic endocervicitis is the most common pathological entity among gynecological disorders. Its importance is second to none in its potential menace to the entire pelvic structures.

The subject in current text books is given scant consideration. To Sturmdorf(1), among others, belongs the credit of bringing the importance of this condition into prominence.

The results of chronic endocervicitis are ordinarily scattered through the text books under the various headings, such as "cervical catarrh," "eversion," "ulceration," "hypertrophy," "cystic degeneration," "erosion," etc. These various pictures are only different manifestations of the same infectious process.

Proper understanding of the pathology of infections of the genital tract places the cervical endometrium in first place as the primary focus of infection in a large percentage of tubal and peri-adnexal infections, chronic abscesses in and about the broad ligaments, ovarian sclerosis, uterine fibrosis, etc.

As a consequence of the increasing importance accredited to the cervical endometrium in the causation of the above mentioned conditions, there has developed a better appreciation of the relative infrequency of corporeal endometritis, as a menace to the pelvic structures. Indeed, the majority of pathologists are agreed that clinically, at least, chronic corporeal endometritis may be safely discarded and thrown into the abyss of oblivion.

Most recent bacteriological studies fully substantiate the relative immunity of the corporeal endometrium to ascending surface infection from the cervical mucosa.

Curtis(2), as the result of a study of 118 cases, states that the endometrium (corporeal) of nulliparae without history of gross infection is normally free from bacteria. All women, who have undergone pregnancy with an otherwise negative pelvic history, have a bacteria-free endometrium. Pyometra and recent exploration of the uterus excepted, the endometrium almost never shows infection except when there is an infection adjacent in the pelvic tissue.

Barbour(3) says, "In striking contrast to what we should anticipate, is the now well established fact that the normal genital tract is above os externum germ-free."

Menge and Kronig(4) were led to conclude, after examining material aspirated from the uterus, that bacteria did not live in the uterine cavity.

Swartz and Kohlberg(5), in an examination of 350 cases discovered 70 which showed a so called interstitial endometritis. This consisted of typical round cell infiltration, which has since been shown to be only the normal transition of the endometrium into the transudative phase of its menstrual cycle.

Strong(6) concluded after examinations of many curettings in 6 years that the uterine mucosa was very resistant to pathological change.

These findings all emphasize the relative infrequency with which the corporeal endometrium is infected.

The following observations demonstrate the importance of the cervical endometrium as the primary focus of infection in innumerable pelvic and systemic disorders.

Langstroth(7) reports the results of swab cultures taken from 60 cases of chronic endocervicitis, with only one negative result. He believes that the cervical endometrium should be considered as a source of focal infection, just as prone to cause systemic manifestations, as foci in teeth, tonsils, sinuses, intestinal tract, etc.

Langstroth(8) also lays much stress upon the mental manifestations ensuing as a result of the presence of chronic endocervicitis. In a series of 50 cases operated on at the New Jersey State Hospital, 58% showed the same infection in both the stomach and cervix. Of these cases, 44% were infected with the streptococcus and 34% with the colon bacillus. Of the pschycic cases, 21 were improved mentally and 15 of these had shown no improvement from removal of other foci of infection.

Among the mental conditions improved were the following: Exhaustion, delirium, manic depressive insanity, epilepsy, constitutional inferiority, dementia precox, psychasthenia, and imbecility. The operative technique employed in these cases was the same and will be referred to as tracheloplasty or cervical conical enucleation. Langstroth draws the conclusion from his series that chronic endocervicitis as a source of focal infection can be accepted as second to no other as a factor in the causation of systemic, mental, and nervous manifestations of disease.

Regarding the bacteriology of chronic endocervicitis, and the mechanism of the production of the so called leukorrhea, Curtis says: "The role of the gonococcus deserves careful consideration. Gonorrheal infection is the exciting cause of leukorrhea in the vast majority of women who have been married. After creating conditions favorable for the development of other organisms, which are accompanied by profuse purulent discharge, in an astonishingly large number of cases, the gonococcus so completely disappears that it is not demonstrable through any means at our command. This suggests that the chief part played by the gonococcus in chronic leukorrhea consists in preparing the soil for the leukorrhea producing organisms."

Crossen says, "Acute endocervicitis is due to the gonococcus or ordinary pus germs."

Langstroth's series of cases, operated on with the assumption that chronic endocervicitis was the focal infection to be eliminated, revealed 88% infected with the streptococcus and 68% infected with the colon bacillus, and 60% of these cases were infected with both of these organisms. In an earlier series, he reports the presence of the staphylococcus. Undoubtedly, many of these cases were originally infected with the gonococcus which had disappeared from the discharge before cultures were made.

Reder(9) lays great stress on the gonococcus type of endocervicitis. He calls attention to the peculiar histological structure of the cervix and says, "It must be borne in mind that the mucosa of the cervix is intimately connected with the underlying muscularis, there being no submucosa and that these compound ducts or laminae and Nabothian glands penetrate deeply into the surrounding fibromuscular stroma. Thus, it can be readily understood how well a gonococcus can ambush himself and remain defiant for a long time." Hess concludes from his observations in post-mortem findings that, "We must regard the average gonococcus infection as involving the cervix rather than the vagina and must consider the infection as a cervicitis rather than a vaginitis."

In infants, excluding a specific vaginitis, the exanthemata and especially scarlet fever, protracted diarrheas, general debilitated conditions, engender a special susceptibility to cervical infections.

In adults, the etiology of endocervicitis needs no amplification in the vast majority of cases, gonorrhea, puerperal sepsis, traumatism by cauterization, dilatation, curettage and birth injuries are the usual causes of endocervicitis.

The teachings of Crossen to the effect that the streptococcus and staphylococcus infections of the cervix extend by way of the lymphatics through the wall of the uterus from the cervical endometrium to the connective tissue around the uterus and to the peritoneum; and that the gonococcus infections of the cervix extend by continuity of mucosa, needs amplification according to Sturmdorf. He says: "The course of any infection in the cervix is not via the uterine cavity and tubal lumina, but along the intermuscular planes of the uterine and tubal walls. Then it travels to the ovarian tunica albuginea as an ascending lymphangitis, whose pathological trail impairs normal uterine contractions by infiltrating the myometrial muscle sheaths, occasionally establishing disseminated miliary myometrial abscesses, then progressing to the periadnexal lymphatic ramifications, inhibits tubal peristalsis, kinks the tubes and agglutinates their fimbrial ostia by the production of velamentous bands, finally reaching the ovaries, the lymphatic infiltrate thickens their capsular tunic with ultimate development of retention cysts. In short, we have an ascending lymphangitis with its resultant uterine, tubal and ovarian mal-function, not an endometritis linking the pathology and symptomatology of chronic endocervicitis."

The pathology of an endocervicitis is briefly that of erosion, round cell infiltration, production of miliary abscesses about the glands and interstitially in the cervix, and even in the connective tissue of the broad ligament. The different macroscopical pictures presented by this pathology vary from simple erosion, eversion with leukorrheal discharge at the os, condylomata, eversion of the cervical wall, papillary erosion, ulceration and Nabothian folliculitis, suppurative folliculitis, granular erosion, mucous polypi, hypertrophy of the cervix, cystic degeneration, cervical stenosis, and carcinoma of the cervix as the final picture. All of these various pictures are different phases, different stages in the development of chronic endocervicitis. The fundamental pathology is the same. In all cases, the characteristic feature is a small round cell infiltration, the infection beginning in the racemose glands and infiltrating the surrounding fibro-muscular tissue.

Depending on the pathological course, the intensity of its symptomatic expression will vary from a mild leukorrhea to a complete functional invalidism. There may be disturbances of menstruation, such as dysmenorrhea, menorrhagia, metrorrhagia, and amenorrhea. Disturbances of fecundation and deciduation are not uncommon. In progressive cases, the ascending lymphangitis inhibits uterine contractions, thereby producing a slowing of the circulation and the development of a menorrhagia. Dysmenorrhea may be produced by the pressure of the infiltrated perimysial areas upon the uterine nerve filaments during the exaggerated uterine contractions of the menstrual period.

Sterility may also result from a chronic endocervicitis, not because of cervical stenosis or pin-hole os, but because of the concomitant infection. Various toxic manifestations of widely different systemic disorders can be traced primarily to an infected cervix. Langstroth has shown that endocervicitis deserves a prominent place as the portal of entry in focal infections.

As to the so called reflex neuroses incident to or accompanying cervical disease, these can be and should be disregarded and placed among the toxicoses where they rightfully belong.

The incidence of cervical carcinoma, developing upon cervical erosion, is well known to all of us and can be compared to the development of carcinoma on the basis of an old stomach ulcer. Certainly, if proper treatment of chronic endocervicitis will tend to decrease the incidence of cervical cancer, then this subject takes its place among the other well-known prophylactic possibilities in the prevention of cancer as one of paramount importance.

In order to accomplish anything definite in the treatment of endocervicitis, some method of treatment which eradicates the focus of infection in the cervical mucosa and racemose glands must be adopted. Successful treatment also presupposes that the cervix shall be left, after treatment has been completed, in as nearly a normal functionating condition as is possible. To be a functionating organ, the cervical musculature must be preserved and the cervix must be patent and covered with suitable epithelium.

In very superficial infections not extending into the Nabothian follicles, mild escharotics and gentle dilatation may by promoting drainage be of some benefit. The curette does not and cannot reach the deeply situated infected glands in the cervical tissues. The indiscriminate use of the curette in this condition is mentioned only to be condemned. Nor can it be said that the standard operations of trachelorrhaphy remedy this condition because all these procedures are based on the misconception that the symptomatology following laceration of the cervix is due entirely to gaping flaps with cicatricial distortion, and that cure demands nothing more than the removal of the cicatrix and suture of the flaps. It is evident that the cure of endocervicitis by these prevailing methods of trachelorrhaphy can only apply to those cases in which the infective process does not extend beyond the limits of the original tear. We know such cases are rare. The infection usually invades all or a considerable portion of the cervical mucosa and is present in the mucous glands.

Circular amputation of the cervix has been suggested as a cure but usually defeats its own purpose by disregarding the physiology of the cervical musculature. Following amputation, we are frequently confronted with a separation of the flaps and exposure of a raw cervical stump. These stumps heal by granulation and the annular cervix, incapable of expansion and dilatation presents a serious form of dystocia.

Schroeder(11) has devised an operation, a modified amputation which is an excision of the cervical mucosa separately from the anterior and posterior lips as a transverse wedge. Then he folds each on itself and sutures the vaginal margin at or near the internal os, the redundant lateral edges are then sutured to each other. This procedure is difficult of accomplishment and does not accurately reline the cervical canal.

Howard Kelly amputates and then removes a wedge of tissue from each lateral angle in much the same manner as cupping of the cervix after supravaginal hysterectomies.

Marckwald's(12) wedge-shaped excision of each lip of the cervix removes much interstitial and glandular tissue, but is open to the objection of incomplete removal.

Hegar's(13) operation is similar to Marckwald's and by some is considered the operation of choice.

Sturmdorf's operation seems, from both physiological and anatomical consideration, to be the most generally applicable of all the various procedures advanced as a cure for this condition. Briefly stated this operation comprises the following steps:

I. The outlining and free liberation of an ample cuff of mucosa from the vaginal sheath of the cervix.

II. Enucleation of the entire endocervical mucosa to the internal os with preservation of its surrounding muscular layer.

III. Sutural inversion of the vaginal cuff into the denuded cervical cavity.

An outlining incision is made to encircle the eroded area around the external os, closely skirting the demarcation border between the healthy vaginal and diseased endocervical mucosa. The cylindrical flap thus outlined is freely liberated from the anterior and posterior surface of the cervix to the level of the internal os. The eroded external os with its everted hypertrophied lips and the entire cervical lining up to the internal os are now cored out of the surrounding muscular bed as a complete core. The cylindrical sheath of vaginal mucosa is now inverted into the muscular funnel and is co-apted at its correct level by two sutures of silkworm applied in the following manner: Beginning with the anterior segment of the circular flap, a long strand of heavy silkworm gut is passed on the vaginal surface transversely through the free border of its central tip one-fourth inch from the edge, like a mattress suture. A like suture is passed through the posterior flap. The right free end of the anterior suture, threaded on a bent Peasely needle is now carried into the cervical cavity, to a level just above the internal os, pierces the cervical musculature in a direction forward, upward, and to the right emerging on the vaginal surface at the top of the flap. The left is directed in the same manner and emerges at the left of the mattress suture. The same procedure is carried out with the posterior flap. Tightening and tying each individual set of suture ends draws the tubular vaginal flap into the denuded cervical canal, thus relining its raw surface.

Of course, Sturmdorf's operation is open to criticism and some deny that this procedure removes all of the infected tissue. Koster(14), especially, has attempted to refute Sturmdorf's work but not successfully(15).

Langstroth(16), in a review of 75 cases treated by this operative procedure, reports the following results: Cure of leukorrhea, reestablishment of the menstrual cycle, reduction in size of, or obliteration of pelvic masses, disappearance of backache, and pelvic pain and great improvement in the general health.

Matthews'(17) reports excellent results with this technique. He claims removal of the focus of infection and maintenance of the normal contour or holding power of the cervix.

I have employed Sturmdorf's technique in some 20 cases with invariably good results. The operative technique is not difficult. The stay in bed is usually from three to five days. Healing is complete in about ten days. Local anesthesia may be used to advantage in selected cases.

Recently, Curtis(18) has advocated the use of radium implanted in the cervix. He uses two 25 mg. tubes, each filtered with a capsule of ½ mm. of gold, placed in tandem in a sheath of dental rubber. The tubes are held in the cervix by a suture through the external os. Application is made over a period of from six to nine hours. Of 36 cases treated in this manner, 26 recovered, 7 were greatly improved, and 3 were not materially benefited.

Kennedy advocates the use of a 25% ethyl alcohol solution in distilled water injected into each lip of the cervix and repeated at frequent intervals. He reports a small series of cases with encouraging results.

Other methods of non-operative treatment are legion. Their number is sufficient evidence that the usual medical treatment is of no avail in any but the mild superficial types of endocervicitis.

SUMMARY

1. Chronic endocervicitis is an extremely common gynecological disorder.

2. It is the primary source of infection in many tubal, ovarian and uterine infections.

3. As a focus of infection it is second in importance to no other organ.

4. Its symptomatology varies from a mild leukorrhea to a complete invalidism of the entire female pelvis.

5. Its bacteriology is that of the gonococcus and any of the usual pus-producing organisms.

6. Treatment necessitates the removal of all infected tissue in the cervix. I believe that this is best accomplished by removal of the entire endocervical mucosa after the technique of Sturmdorf, or by the use of radium as advocated by Curtis.

REFERENCES.

1. Sturmdorf, Gyno-plastic Technology.

2. Curtis, S., Gynec. & Obs. 1914.

3. Barber, Albutt, Playfair, Eden—A System of Gynecology, 1909, pages 237-248.

4. Menge & Kionig—Bacteriology des Weiblichen Genital.

5. Schwartz & Kohlberg—Journal Missouri Med. Soc., 1919, XVI, page 428.

6. Strong—Am. Journal of Obstetrics, 1919, LXXXX, page 45.

7. Langstroth—Am. Journal of Obstetrics, Vol. 2, No. 1, page 96.

8. Langstroth—Journal Med. Soc. of New Jersey, 1919, XVI, page 135.

9. Reder—Am. Journal of Obs. & Gyn., Vol. 1, Page 12.

10. Sturmdorf—Gyno-plastic Technology.

11. Schroeder—Charits Annalin, Berlin, 1880, page 340.

12. Marckwald—Archives Gyn., 1876, VII, page 48.

13. Hegar—Die Operative Gyn., 1881, page 462.

14. Koster—Surgery, Gynecology & Obstetrics, Vol. 31, page 1310.

15. Sturmdorf—Surgery, Gynecology & Obstetrics, Vol. 32, page 534.

16. Langstroth—Journal Med. Soc. of New Jersey, 1919, X.

17. Matthews—Am. Journal of Obstetrics & Gyn., Vol. 1, page 1002.

18. Curtis—J. A. M. A., 1920, LXXIV, page 1706.

19. Kennedy—Am. J. of Obs. & Gyn., Vol 6, No. 9, page 29.

FACTORS INFLUENCING THE SAFETY OF ETHER ANESTHESIA.*

R. M. Waters. M. D., Sioux City, Ia.

The errors most commonly made in the administration of ether, which result in needless damage to patients, may be discussed under three heads:

I. Chemical Content of Ether Used.
II. Interference with Freedom of Respiratory Movements.
III. Dosage.

I. CHEMICAL CONTENT OF ETHER USED.

We all realize the importance of using a product made by a reliable manufacturer. Courts of law also recognize this necessity as has been shown in certain damage suits.

Researches of the last few years have cast some doubt on the older conception of the chemistry of anesthetic ethers. Cotton(1) and Wallis(2) have proved to their own satisfaction that pure ether does not give the results which we ordinarily ascribe to ether. They hold that the impurities incident to the production of sulphuric ether are largely responsible for the desirable anesthetic effects. Going further, they hold that the undesirable effects of ether are also due to impurities and that it is possible to eliminate the undesirable impurities and retain the desirable ones. Ethers conforming to the specifications of each of these men are now on the market, but the clinical verification of their claims is yet too incomplete to put them in other than an experimental place. On the other hand, Bourne(3) has produced evidence to prove that ether does not depend on impurities for its anesthetic value. Some support to the theories of Cotton and Wallis is lent by the clinical fact that the most volatile part of the well known market ethers is the most useful for the production of anesthesia. Hence a container should not be opened except for immediate use. In addition to the loss of the more volatile part of the ether when a container is once open, contact with air permits chemical changes which make the ether decidedly more irritant to the mucous membrane and more toxic.

---

*Read before the Elkhorn Valley Medical Society Meeting, Oct. 3, 1922, Norfolk, Neb.

From a practical standpoint then, to sum up the chemistry of ether which is reliably known,we can say that it should be the product of a reliable firm, in tight containers, small in size to avoid the necessity for using a second time, and an open mind should be maintained toward the attempts to improve the process of manufacture.

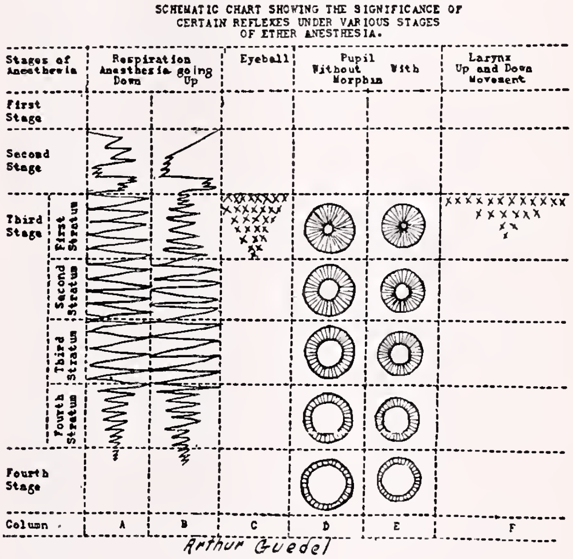
II. INTERFERENCE WITH FREE RESPIRATION.

Contrary to common belief, the damage from this factor is not so much due to depriving the patient of oxygen as it is to the embarrassment of chest movements causing a greater load to be borne by the circulatory muscle. The normal rhythmic change from negative to positive pressure in the chest, accompanying free respiration, appears, clinically, to be a very large factor in pushing the blood stream, a much larger factor, I believe, than physiologists have been accustomed to accord it. Any real obstruction to the upper air passages, if kept up for an appreciable length of time, results in circulatory changes, even though the patient be kept pink with pure oxygen.

Respiratory embarrassment may occur during ether anesthesia as the result of:

1. Dosage.
   a. Lack of smoothness in increasing dosage results in froth and mucus and in muscular spasm.
   b. Overdose results in muscular relaxation causing obstruction.
2. Mechanical Obstruction:
   a. Physical deformities of upper air passages.
   b. Too many layers of gauze or towels in the open drop method.
   c. Poor working valves or small intakes in the closed method.
3. Position.
   For instance, the prone position which always forces the respiratory muscles to raise the body weight with each cycle, or the dorsal position for tonsillectomy which always runs the risk of blood or tissue causing obstruction.

Correct position for the operation to be performed, correct well governed dosage of ether, available oxygen to relieve anoxemic muscular spasm when it has developed as a result of improper dosage, and a good pharyngeal airway will avoid interference with respiratory movements during anesthesia or quickly restore them to normal.



Guedel's Chart:—Dividing Third Stage of Ether Anesthesia into Four Planes.

III. DOSAGE.

In succumbing to the influence of ether, the organism "goes under" comparatively slowly, making observation of pathological physiology as evident in external signs, fairly easy. To disregard all these guideposts to safety and make the statement "I only watch the respirations when I give an ether anesthetic" is to court disaster. The various sensory and muscular activities disappear very gradually provided the drug is displayed to the patient properly. In the following discussion it is taken for granted that every anesthetist is equipped with sufficient apparatus and skill to add to or take from the dosage very slowly and uniformly. The special senses disappear so early that for practical purposes, the only point to remember is that hearing disappears last. This fact is often forgotten in the operating room and both conversation and the handling of instruments allowed to detract from the comfort of the patients.

Guedel(4) has described a sub-classification of third stage ether anesthesia which does away with the former uncertainty in the administration of this drug. He divides the third stage into four planes or strata and describes the physical signs characteristic of each stratum. The first of these four planes, the one nearest the second stage, he rightly maintains is sufficient for all surgical demands and is by far the least damaging to the patient. The first stratum is characterized by shallow breathing approximating normal respiration. Guedel has made the original observation that the extrinsic muscles of the eyeball lose their tone or become paralysed during the first stratum. You have all doubtless observed the beginning of loss of tone of these muscles during the stage of excitement when the eyeballs are seen to make spasmodic jerky movements. As the patient is carried to the first plane of the third stage, these movements of the eyeballs become rhythmical, rotating from side to side or up and down, or they may become fixed in a position off center (one set of muscles more completely paralysed than another). As the anesthesia deepens to the second stratum all the extrinsic muscles are paralysed and the eyeballs fix on center, i. e., look straight ahead. The well known irregular and exaggerated up and down movements of the larynx, which we were always taught to look for as a sign of too little anesthesia, occur in the upper part of this first stratum as we would expect. When the eyeball movements become more active and when the exaggerated pharyngeal movements begin to occur there is yet time to increase the dose of ether slowly and maintain the anesthesia at the required depth. If the increase is made abruptly, spasmodic coughing or vomiting will occur.

The accompanying chart is reproduced from Guedel's work with the suggestion that the author's original article referred to above be consulted.

When one has acquired the ability to carry a patient in this first stratum of the third stage throughout an operation the reward for his trouble will be manifest. Little nausea will result and the so called "shock of operation" will be greatly minimized, for the greatest part of the "shock of operation" is caused by poorly conducted anesthesia.

BIBLIOGRAPHY.

1. Cotton, James, Jour. Canadian Med. Asso., Sept. 1917.
2. Wallis, R. L. and Hewer, C. L., A New General Anesthetic, Lancet, 1, 1173, 1921.
3. Bourne, Wesley, and Stehle, R. L., The Anesthetic Properties of Pure Ether, J. A. M. A., Vol. 79, p. 375, July 1922.
4. Guedel, A. E., A. Sub-classification of Third Stage Ether Anesthesia, Bulletin, N. A. R. S. No. 3, 1920.

SYPHILIS OF THE UPPER AIR PASSAGES.

Barney M. Kully, M. D.
From the Department of Otolaryngology, Medical School, Creighton University, Omaha, Neb.

The organs of the upper air passages are among the most frequently involved in all stages of syphilitic infections. Neuman states that syphilitic lesions of the pharynx are as frequent as are syphilitic lesions of the skin. According to Ballenger the pharynx is involved in 10%, the nose in 3%, and the larynx in 1 to 15% of all cases. St. Claire Thomson(1) states that 15% of luetic patients show involvement of the larynx at autopsy. It is of primary importance that the general practitioner as well as the specialist be thoroughly conversant with this phase of the disease, for nowhere in the body do more disastrous and irreparable results follow failure to recognize early and thoroughly treat this condition.

Pathologically, the syphilitic lesion of the upper air passages resembles any other syphilitic lesion. There is the same infiltration of round cells, lymphoid cells and lymphocytes with the tendency to break down and form widespread areas of necrosis, the growth of new connective tissue with its subsequent contraction, the tendency to attack blood vessels. The clinical picture, on the other hand, is a most bizarre and varied one.

Primary lesions of the upper air passages are not uncommon. The lips, tongue and tonsils are most commonly involved; the gums and cheeks rarely so. Of 6,000 cases of extragenital chancre collected by Wilson(2) 600 were on the tonsil. In Fournier's series(3) of 1124 cases of extragenital chancre, the chancre was on the lip in 567 cases, the tongue in 75, the tonsil in 69, the nose in 18 and the gums, soft and hard palate in 16. This ratio of distribution is typical of several other large series. Five cases of chancre of the epiglottis have been reported. Chancre of the Eustachian orifice resulting from the use of infected Eustachian catheter, is now a rarity. In 1900, however, Sendriak(4) collected 88 cases.

The inoculation may be from kissing, from contaminated drinking cups, pipestems, instruments or from infected wet nurses, but in a majority of cases probably results from unnatural sexual practices. It has been reported following tonsil operations(5). Chancre of the nose has frequently been reported in physicians due to picking the nose with contaminated fingers.

The chancre usually appears as an elliptical or circular sluggish ulcer with indurated base and edges and is covered with a slimy film or crust. It heals in from four to ten weeks, but when untreated may persist for 8 months. It leaves but an insignificant scar. More than one chancre may be present(6). Swelling of the draining glands is always marked and of diagnostic importance. The glands are smooth, hard and indolent. The enlargement and induration are out of proportion to the history and extent of the ulcer. On the tonsil, the chancre frequently presents an atypical appearance. There may be no discernible ulceration. It may appear as a fungating growth of the tonsil or the entire tonsil may simply be enlarged, firm and hard. Unilateral firm enlargement of the tonsil with early involvement of the submaxillary glands, occurring in a young subject—warrants the suspicion of a chancre.

Dark field examination for spirochetes from lesions of the mouth and pharynx is not reliable owing to the presence in the mouth of spirochetes closely resembling those of syphilis. Resort must be had to gland puncture. Discovery of the organisms of Vincent's angina in a suspicious lesion does not exclude primary syphilis for the organisms of the two diseases may coexist.

Secondary lesions of the upper air passages occur in 5 to 8 weeks after the initial infection. It has been noted that when the primary lesion occurs in the mouth or pharynx, especially if on the tonsil, the secondaries are unusually early and severe. They have been reported as early as the second or third week following a tonsillar chancre(7). Secondary lesions may recur at irregular intervals usually during the first and second years. Thomson(1), however, has reported mucous patches 15 years after the date of the primary infection.

Secondary lesions of the upper air passages are of two types—papular and erythematous. The papular lesion, commonly called the broad condyloma or mucous patch represents a hyperplasia and swelling of the epithelium with superficial necrosis. It occurs most commonly in the mouth and throat, especially on the mucosa of the cheeks, the inside of the lips, the edges of the tongue, the soft palate and the tonsil. It is rare in the nose and larynx, though mucous patches of the vocal cords have been seen. The lesions appear as grayish white opalescent patches, irregular in shape and size, slightly raised above the surface and surrounded by a narrow red areola. They are usually painless. Mucous patches may undergo superficial ulcerations, which may become painful. On healing, there are left small depressed scars, the scars of Erb. These ulcers frequently appear as fissures in the angle of the mouth. Persistent fissures in the angle of the mouth call for investigation for lues.

The erythematous manifestations of secondary lues are more frequent than are the mucous patches. They are found in every organ of the upper air passages. In the pharynx the appearance of the erythema is almost diagnostic. The pharynx is intensely congested and presents the appearance of a severe acute pharyngitis—yet the temperature is normal or but slightly raised, there are no chills, the soreness is slight, there is little or no pain, no dysphagia and the history of the duration is usually 2 to 3 weeks. The appearance of a severe pharyngitis with very mild subjective symptoms is significant of secondary erythema. This is particularly true if the erythema is sharply demarcated at the junction of the hard and soft palate and is associated with a beadlike enlargement of the post cervical glands.

In the nose the secondary erythema presents a marked bluish turgescence of the nasal mucosa(8). The clinical picture is that of an acute rhinitis, with a tendency to persist. This tendency to chronicity is especially marked in hereditary lues. Syphilitic snuffles, the coryza syphilitica neonatorum is a secondary erythematous lesion. Lesser(9) states that this condition is escaped by no case of hereditary syphilis. Long standing colds in badly nourished infants, associated with blood streaked discharge, crusts and scabs indicate investigation for syphilis.

In the larynx and trachea the erythema manifests itself as a subacute laryngitis and tracheitis. In prelaryngoscopic days the hoarseness, associated with suspicious lesions, was considered of diagnostic importance.

The pathology of tertiary syphilis of the upper air passage differs but little from the pathology of general tertiary syphilis. The gumma, the gummatous infiltration, and the gummatous ulcer are the essential lesions. There is a seeming accentuation of the well marked tendency of syphilis to produce cicatricial tissue with its subsequent contracture and resultant deformity. This is also true of the tendency to invade the bone and cartilage.

The gummata and their resultant ulcers vary greatly in size. They may be very small or may involve an area almost as large as the mouth and pharynx. The luetic ulcer is ragged with indurated sinuous edges. The edges appear sharp cut and punched out. The floor is grayish and covered with a slimy film. Bone or cartilage may be felt at the base. Luetic ulcers are usually painless. Associated with an underlying periostitis, however, they may become painful. The process may begin in the deeper tissues and form a crater shaped ulcer with small fissures on the surface—the fissured ulcer of Fournier.

The most striking clinical feature of the disease is the appalling extent to which the process may have progressed before the patient seeks medical aid. Extensive ulceration, extensive destruction of tissue and deformity may be present with little or no subjective disturbance. The lesions may appear as early as the second and as late as the fiftieth year following the initial infection.

In the mouth and pharynx the favorite sites of the lesions are the hard and soft palates, especially at their junction, the posterior pharyngeal wall and the tonsil. Kidney shaped ulcers of the tonsil are almost diagnostic(10). No region is immune, however. The organisms of Vincent's angina are frequently found in these lesions.(11) Upon healing the ulcers leave stellate shaped white radiating glossy scars which are also almost pathognomonic. The deformity and functional impairment depend upon the structure involved and the extent of the lesion. Lesions of the soft and hard palate, when not treated result in perforations into the nasal cavities. The perforations may be small or as in a case recently seen by the writer, may involve the entire roof of the mouth and the alveolar arches. Involvement of the posterior pharyngeal wall and soft palate results in a stenosis of the opening into the nasopharynx, at times a complete closure with its inevitable train of symptoms. Posterior pharyngeal involvement may result in spinal caries, sometimes laying bare the cord. Almost every conceivable type of contraction and deformity may occur. It is of prime importance to recognize the rapidity with which these luetic changes take place. Given a suspicious infiltration of the palate or posterior pharyngeal wall it is folly to await the result of a Wassermann reaction. Vigorous antiluetic treatment must be instituted at once, 24 to 48 hours delay may be responsible for a perforated palate, a stenosed nasopharynx or some other deformity beyond the skill of surgery to repair.

Tertiary syphilis of the nose is characterized chiefly by its tendency to involve the bone and cartilage. The onset usually escapes observation. Ulceration and sequestration are usually present when the patient presents himself for examination. The most common lesion is infiltration of the septum rapidly followed by necrosis and perforation. All septal perforations, of course, are not specific. Involvement of the osseous part of the septum, however, unless due to surgical interference is practically diagnostic of syphilis. The saddle back or frog face nose caused by a sinking in of the bridge is not due to perforation of the septum, but to an involvement and contracture of the tissues about the nasal bones and nasal processes of the superior maxillae. If the infiltration involves the septum and nasal bones, the skin overlying the bridge of the nose may be reddened and oedematous. Pressure over the bridge elicits tenderness. A gumma of the septum may manifest itself by a rounded swelling in the hard palate just behind the incisor teeth. There may be gummatous infiltration of all the tissues of the nose, with a constant nasal obstruction, nasal discharge and anosmia. This condition is usually followed by an atrophic rhinitis with ozena, due to destruction of the ciliated epithelium and cavernous erectile tissue. Abscesses of the septum and of the lachrymal passages may complicate intranasal syphilis.(12)

Syphilitic involvement of the sinuses is not uncommon. Unfortunately it is sought for and recognized but too rarely. One sinus alone may be involved or there may be a luetic pansinusitis.(13) Syphilitic sinusitis is usually associated with a thick scabby discharge, at times blood streaked and offensive. There may be a periostitis of the sinus wall giving a sinus dark on Roentgen examination and transillumination without evidence of pus. Operating without weighing the indications or on X ray findings alone which is inexcusable, has resulted in much unnecessary and indiscriminate surgery on luetic sinuses. Three cases of luetic involvement of the maxillary sinus recently came under observation, two of which had been previously operated upon. It is well to remember, however, that sinus suppuration associated with syphilis, may be merely coincidental and not syphilitic.

Tertiary syphilis of the larynx may involve any structure. The epiglottis is most commonly attacked, and at times is almost completely destroyed. Both vocal cords may be involved, though unilateral lesions in the larynx are the rule. The infiltration and ulceration may be extreme resulting in stenosis with dyspnea. These cases must be kept under careful observation as the infiltration may swell suddenly and completely close the lumen. Patients with luetic infections of the larynx, associated with dyspnea must be hospitalized and prepared for emergency tracheotomy. Potassium iodide medication is distinctly contraindicated unless a tracheotomy has previously been performed, as it causes an oedema of the laryngeal mucosa frequently sufficient to close an already stenosed lumen. Necrosis of the underlying cartilage may occur resulting in a delayed convalescence. Hoarseness is always a predominant symptom. Use of the voice is not painful unless a perichondritis is present. Dysphagia occurs when the epiglottis and the arytenoids are involved. Hyperplastic changes, the so called laryngitis parasyphilitica, occasionally occur, a condition not amenable to antiluetic treatment.

The deformity and functional impairment may vary from a slight stenosis to a complete closure and from a slight hoarseness to a complete aphonia. Both vocal cords may be united by a cicatricial web. Almost any conceivable type of deformity may be produced.

Syphilis of the trachea and of the bronchi may have all of the secondary and tertiary manifestations of the other organs of the upper air passages. These rarely come under observation, however. Most of the cases are not recognized until the sequelae or contracture phenomena, resulting in stenosis, have made their appearance. Dyspnea is the predominant symptom. The writer has repeatedly dilated a luetic stricture of the trachea, which, at the time it came under observation, was associated with a dyspnea so intense that for a time it threatened life.

The clinical manifestations of syphilis of the upper air passages are legion and varied. The contracture phenomena and sequelae with their resultant deformity and functional impairment are preventable conditions and emphasize the need for special study in this field.

BIBLIOGRAPHY.

(1) St. Clair Thomson, System of Syphilis Vol. V., p. 314—D'Arcy Power & J. Keogh Murphy.

(2) Wilson—Chancre of the Tonsil with Report of a Case—The Laryngoscope 1912, p. 110.

(3) Fournier—Kingsbury Dermatochromes, New York, 1915.

(4) Sendriak—Monatsch. f. Ohrenh. 1900.

(5) W. H. Kelson—Primary Chancre of the Tonsil—British Medical Journal. Oct. 26, 1901.

(6) H. M. Robinson—Medical Review of Reviews 1919, Vol. XXV, p. 530.

(7)R. Renow—Review de Laryngologie d'Otologie et de Rhinoligie, 1820. Vol XLI, p. 538.

(8) H. B. Graham—Frequent but Neglected Evidences of Syphilis from the Side of the Nose, Acces-

sory Sinuses, and Ear. Am. Journal of Syphilis. 1919 Vol. 3, p. 26.

(9) Lesser: Quoted by Bruck, Diseases of the Mouth, Throat and Larynx. P. 110.

(10) W. E. Sauer—The Reaction of the Ear, Nose and Throat. American Journal of Syphilis. 1920 Vol. IV, p. 431.

(11) Gerard-Maurel & Renard—Severe and Fatal Cases of Mercurial Stomatitis—Revue de Stomatologie. Dec. 1920, XXII, p. 12.

(12) Belancioni—Clinical Observations on Overlooked Syphilis of the Nose, Throat, Larynx and Ear. Giormale di Medicina Militaire. Mar. 1921, LXIX, 3.

(13) J. A. Pansardi—Syphilis of the Primary Air Passages and of the Ear. Revista Medico Cirurgia do Brazil, 1919, Vol. XXVII, No. 4, p. 109.

INTUSSUSCEPTION—SOME POINTS IN DIAGNOSIS AND A PLEA FOR EARLIER RECOGNITION.

Floyd Clarke, M. D., F. A. C. P., Omaha. Neb.

In retrospect many of us can no doubt recall experiences in diagnosing this condition in children where a delay of twenty-four hours has meant the sacrifice of a baby's life.

This study is undertaken with the desire of calling to your attention a few diagnostic features which seem to stand out prominently in the early recognition of this rather peculiar affection,—occurring particularly in infants and young children.

The cause is rather obscure but interesting. For a long time it has been thought that the condition was brought about by a perverted or irregular muscular contraction in the walls of the intestines. Nothnagal has produced intussusception experimentally and proved that the lower gut is drawn over the upper.

There can be no doubt that perverted peristalsis plays a part in the mechanics of the condition. Recently, however, Perrin and Lindsay have come forward with a rather novel causative factor, and one which they believe to have more influence in the etiology than irregular peristalsis.

It is their opinion that the quantity of lymphoid tissue about the terminal portion of the ileum and in the vicinity of the ileocecal valve together with the tendency toward gastro-intestinal disease at the age when intussusceptions have their greatest incidence have a distinct bearing as a cause of the condition. The amount of lymphoid tissue about the ileocecal valve is greatest during the first year of life and steadily recedes. They conclude that the majority of cases of intussusception are caused by inflammatory swellings of lymphoid tissue.

The diagnosis is not always easy but when one realizes that the mortality of cases operated on after 48 hours is 50% and those within 24 hours only 10%, the necessity for an early recognition is at once apparent. All the classical symptoms are not always present, and if there is hesitation in arriving at a diagnosis in a given case, valuable time is lost.

A previously healthy male child is taken suddenly ill with pain and shortly after the onset vomits. The suddenness of the onset of illness is characteristic and almost uniformly present. Occasionally, however, there is a previous history of gastro-intestinal disturbance or trauma. Numerous observers have described the pain as extremely severe, the infant screaming and tossing about. The symptom pain is difficult to describe. Individual infants bear it in different ways. Some of these infants in the beginning are merely uncomfortable; others appear to have more or less colicky pains and still others scream and cry as though in great distress. The attacks of pain come and go, and for a brief period between, the infant will seemingly be quite comfortable. Accompanying the pain there may be one or more blood streaked fecal stools with mucus and after these stools a thick bloody mucus may appear. In some cases there is a total absence of blood in the stool.

In a fairly large proportion of cases one of the early symptoms is prostration. When present it is one of the most characteristic symptoms of the condition, and is more marked than in any other abdominal condition occurring in children.

In approximately 90% of all cases an abdominal tumor can be readily palpated. It will be found occasionally in the right upper abdomen, sometimes in the left abdomen and at times in the lower abdomen, depending upon the location of the intussuscepted intestine and the time elapsing between the onset of symptoms and our examination. If there is much abdominal distension a tumor cannot be found. A rectal examination will be of assistance if the tumor is in the lower abdomen. In a fairly small proportion of cases it will be impossible to palpate an abdominal tumor even if sought for early. The intussuscepted intestine may be tucked away under the liver and not be felt even under an anaesthetic.

The diagnosis is not difficult if one has the condition in mind and remembers that the onset is abrupt with pain of greater or less intensity, usually marked prostration in a very few hours after the onset, the palpation of a definite abdominal tumor, and the appearance of a bloody mucus in the stool.

It is the occasional case that presents difficulties. Without going into a prolonged differential diagnostic study it is in these cases that a fluoroscopic examination may assist. Dr. A. W. Abbott of Minneapolis in a recent paper asserts that in all cases he has examined fluoroscopically, the shadow of a thick oblong mass was to be seen. If this examination was inconclusive an exploratory laparotomy preferably under gas anaesthesia would be in order.

A final word regarding treatment. I believe we all admit that the treatment is entirely surgical, but have we not seen the surgeon in reducing and manipulating the gut so prolong the operation as to seriously endanger the little one's life.

To obviate this the suggestion of Dr. Langley Porter in advising a modification of the Hirschsprung water method with the abdomen open seems advisable. Warm normal salt solution is run into the intestine per rectum at a pressure head of about thirty inches. The invagination is made to unfold by water pressure. Very little if any manipulation of the gut is necessary.

SUMMARY.

(1) An early diagnosis can be made in probably over 90% of cases and with early diagnosis the surgical risk becomes almost nil.

(2) The condition is characterized by an abrupt onset with pain, marked prostration, the appearance of an abdominal tumor and bloody mucus stools.

(3) These classical symptoms may or may not all be present in a given case, but if one delays in coming to a definite conclusion the surgical risk becomes greater and the mortality increases.

(4) In doubtful cases, a fluoroscopic examination may help, together with the advisability of an exploratory laparotomy.

REFERENCES.

Kerly, Practice of Pediatrics, 1917 Edition.

Holt, Diseases of Children, 1917 Edition.

Perrin, W. S. & Lindsay, E. C., British Journal of Surgery, July 1921.

Abbott, A. W., Journal Lancet, May 1921.

Strauss, A. S., Surgical Clinics, Chicago, Vol. 4-535, 1920.

Porter Langley, Archives of Pediatrics, 35-142, March 1918.

Koplik, Diseases of Children, 1918 Edition.

THE IMPORTANCE OF A PATHOLOGICAL LABORATORY IN A HOSPITAL.*

Michael G. Wohl, M. D., Omaha, Neb.

When I received an invitation to read a paper before the Iowa Catholic Hospital association I thought it would be timely to say a few words regarding the practical value of a laboratory in a hospital.

I do not like the term "laboratory" as applied formerly for it conveyed the idea of a distinct and separate department—usually a room somewhere in the hospital, often the darkest room in the basement, to which specimens were sent, and from which some form of a report was expected.

In the present day of scientific efficiency in medicine, the entire hospital is a laboratory where surgeon, internist and other specialists are coworkers in the same field with the same aim in view—to cure human ills and to investigate disease.

The laboratory man is part of the same institution. He has or should have access to the patient whose condition is being studied at the hospital; in other words, he carries the microscope—his special instrument of precision—to the bedside. It is only then that the doctor and the patient get the most good out of the laboratory.

---

*Read before the Iowa Catholic Hospital Association, Waterloo, Ia., Oct. 10-12, 1922.

It seems to me that the keynote of success of a pathological department lies in closer cooperation between clinician and pathologist.

We are apt to expect too much of a laboratory. An important point to remember is that laboratory findings must be considered simply as additional clinical evidence.

We all recall the artist who when asked what he mixed his paints with, replied: "With brains, sir." The laboratory findings to be of value must be mixed with sound clinical judgment acquired by years of experience.

The Sisters of Mercy of Council Bluffs, Iowa, to whom I wish to express publicly our great appreciation for their hearty cooperation at all times in their efforts to serve humanity, have fully recognized the importance of the laboratory and have equipped one in the hospital, which has been in operation since 1919.

We propose to give every patient the benefit of at least the minimum laboratory service. This includes a complete chemical and microscopical urinalysis and blood count. Every patient admitted to the hospital, irrespective of the length of time that he may stay in the hospital, must have a complete urinalysis. In surgical cases particularly in acute abdominal cases, a blood count, preferably a differential count is made before the patient is operated on.

It is our experience that a knowledge of the percentage of polymorphonuclear leucocytes is of greater practical importance in an acute abdomen than a total white blood count. It requires only a few minutes time and may prevent a needless surgical interference.

We are all familiar with cases that are operated on for acute appendicitis and prove to be cases of typhoid fever; or as I recall a case that had abdominal symptoms of appendicitis, and three days after the appendix was removed the patient broke out with an eruption of small pox. I do not wish to give the impression that the doctor should subjugate his clinical judgment to the hemocytometer, cystoscope, or expect his chemical reagents to solve all the mysteries of diagnosis; yet, the blood findings when properly interpreted are not only corroborative, but may prove of differential significance in obscure conditions.

In tonsil work the coagulation rate of the blood is determined routinely. Although one may argue as to whether four or six minutes is to be considered normal, yet few of us would have the courage to remove the tonsils in the presence of a coagulation rate perceptibly diminished, say for nine to twelve minutes.

I would like to see routine blood counts made in cases that have an unaccountable fever, in whom the tonsils are removed as a measure of last resort, to be in accordance with the times.

I recall now a lad of nine years of age who had had a fever for six weeks that could not be accounted for. His tonsils were removed but the fever did not subside; the development of an additional symptom of bleeding from the nose drew the doctor's attention and a blood count revealed a typical picture of acute lymphatic leukemia. The child died one month later.

The clinician may be able to get along without a blood count or blood clotting time in a certain percentage of the cases, yet in his surgical work the microscopical examination of tumors is imperative. Take for instance an organ like the breast. It has been our experience from examining over five hundred breast tumors that the clinician fails to recognize about twenty-two per cent of cancers of the breast. His absolutely correct diagnosis is less than fifty per cent. These figures are startling, yet they are in conformance with the experience of the larger clinics in this country.

At the Mercy Hospital we examine routinely all tissues removed, including appendices, tubes, etc. In breast cases frozen sections are resorted to for immediate diagnosis. The surgeon governs the extent of operation by the pathological report. In tissue examination the laboratory not only corroborates but frequently makes the diagnosis.

The laboratory serves also as a protection to the hospital as for instance in the examination of curettings.

In cases of genitourinary surgery as well as major surgical operations the laboratory is of great aid in determining the surgical risk by various functional kidney tests as well as blood chemistry. The pathologist is used by the clinician as a consultant.

It is true that lay technicians are valuable and absolutely necessary, yet when it comes to interpreting laboratory findings as clinical symptoms in above or similar instances, a degree in medicine and in addition several years' experience in hospital work are essential.

In obscure medical cases the clinician, in cooperation with the pathologist, determines the extent of laboratory work indicated, such as Wassermann test, spinal puncture, blood culture and basal metabolism determination. We do not believe it wise to bleed every patient for a Wassermann test any more than it would be advisable to submit every patient to X ray of the gastrointestinal tract. We must keep clearheaded in the midst of fad and fancy. In the words of Holmes: "Science is a first-rate piece of furniture of man's upper chamber if he has common sense on the ground floor. But if a man hasn't plenty of common sense, the more science he has, the worse off is his patient." (Quoted by Royster, A. M. A. Jour., Aug. 5, 1922).

Thus we all realize that laboratory facilities for diagnosis are as necessary a part of a hospital today as its operating rooms.

In hospitals that have a training school for nurses the laboratory fulfills an important function of practical instruction in elementary laboratory work. In our hospital every nurse is detailed for six weeks' laboratory work, during which time she learns urinalysis, blood counts, gastric analysis, etc. She thus gets a practical demonstration of her lecture work in pathology and bacteriology.

The importance of a careful postmortem both to the physician and community cannot be too much emphasized. The routine autopsy reveals our mistakes and adds to our store of knowledge. Let me recite to you a case I autopsied some time ago.

Mrs. M., age 34, six months pregnant. Brought to hospital because of uterine hemorrhage. Upon examination the obstetrician diagnosed the case as that of inevitable abortion. Conventional procedure in such cases instituted; patient three days later became toxic and commenced bleeding again. Patient was curetted and uterus packed. She developed abdominal symptoms, and died at end of five days. The postmortem revealed a ragged opening in the body of the uterus with a piece of gauze sticking through it. Abdomen was the seat of peritonitis. The findings are self-illuminative.

Chiari (Harvey Lectures 1910-11, p. 20) justly said that the autopsy room is "Locus ubi mors gaudet succurrere vitae."

For educating one's self and other members of the profession to be better practitioners of medicine the pathological department is absolutely a sine qua non; as Dr. Baldy, President of the Pennsylvania State Board of Health, puts it: "It is not only important, it is the salvation of the practice of medicine; it is the education of the future doctor." (J. Med. Soc., N. J., Oct., 1918).

A factor which is important for the benefit of all concerned is the question of laboratory compensation. This is a vital point. We realize the lack of trained pathologists throughout the country. In the words of Dr. McCarthy, "They are not being made for the simple reason that young men must live and allow their families to live social lives commensurate with their intellectual training." (Modern Hospital. 1918, p. 38). I sincerely hope that the time will come when clinical pathology will be an end in itself; when the pathologist will not be compelled to engage in some clinical side-line such as syphilology, or use the laboratory as a stepping stone to "something better." Of course, the problem will be solved when the hospital will employ fulltime pathologists at adequate compensation and encourage them to carry on scientific investigation in the hospital's laboratory.

"Statistics have been given to show that four or five times as many people died from the influenza scourge of 1918 and 1919 as perished in the Great War."

"Although American families are smaller than they were half a century ago the death rate is far more significant than the birth rate."

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor,........................Madison, Neb.
R. B. Adams, M. D.,
Associate Editor,........................Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association
Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.

F. A. Long, Chairman........................Madison
W. O. Bridges........................Omaha
B. F. Bailey........................Lincoln
R. B. Adams, Ex officio........................Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII April, 1923 No. 4

Annual Meeting, Lincoln, May 15-17

DELEGATES

One hundred per cent attendance at the next meeting is urged. Delegates should not fail to be present.

DUES

Up to the present time a large number of members have failed to send in their dues. These have been delinquent since Jan. 31, 1923. All members in arrears will lose their Journal, their Defense rights and will not be entitled to attend the Annual Meeting. Send dues in at once so that you will be in good standing.

THE NEXT ANNUAL MEETING

Every member of the State Association should by now be planning to attend the annual meeting, May 15-17, 1923. The work being done by the various committees is far enough along so that a promise of a meeting, the equal of, if not better than, any previous meeting, can be made. Both the programme and the entertainment will be the best that can be obtained. Decide to be present now and let nothing interfere with this decision.

MEDICAL LEGISLATION

Gradually, as a result of non-opposition on the part of the regular medical profession of Nebraska, each succeeding legislature adds to the legal "rights" and "privileges" of the irregular "healer." There seems to have been overlooked entirely the obligation which the medical profession owes to the people, namely, protection against themselves. As long as there are credulous individuals, intelligent enough on general matters, woefully ignorant when the lives of themselves or their families are concerned—there will always be quasi healing groups with golden promises of health for a consideration. For several legislatures only sporadic attempts have been made to kill dangerous legislation concerning medical practice. Is the medical profession doing its duty? Are we not failing to function as sources of accurate scientific information to which the public is entitled? Naturally, a legislature hearing only the "claims" and "brilliant achievements" of various medical cults, without evidence to the contrary, will follow the line of least resistance and grant the desired legislation. Session after session of the Nebraska legislature has added to the statutes, laws which limit and confine the field of the conscientious general practitioner by enlarging the privileges of the untrained "healer." Nebraska physicians must definitely and clearly recognize the situation and function at least to the extent of giving the members of the legislature the truth about medicine.

A DANGER TO MEDICAL EDUCATION

Every physician in Nebraska has a right to be proud of the growth, progress and high standing of the University of Nebraska, College of Medicine. The clinical faculty of the institution is serving entirely without compensation from the State. They are endeavoring to the limit of their ability to fulfill the functions of the University Medical School to the end that competent medical practitioners shall be well trained for the care of sick people. Each succeeding legislature has embarrassed the University Medical School with bills designed to add to the present overcrowded medical curriculum, chairs of homeopathic and eclectic medicine. Should a move of this sort, backed by a hired lobbyist, be inaugurated one would be led to question the unselfish motives of those behind the bill. The installation of such chairs would be a distinctly retrograde movement in medical education. No medical school connected with a State University, has a department of either eclectic or homeopathic medicine. Departments which have existed in the Universities of Iowa, Michigan and Ohio, have died out because of lack of students. Why should the University of Nebraska, a scientific teaching institution, be handicapped with the necessity for a type of instruction which has no scientific foundation?

HONOR HIM TO WHOM HONOR IS DUE

An eloquent plea was recently made by one of the ablest members of our State medical Association for a more generous recognition of the worthy men of our profession. He deplored the selection of men for high office in our medical organizations not because they represented high ideals nor because of their achievements in the science and practice of medicine, but rather because of their political astuteness and their ability to extend the glad hand. He plead for a more general recognition of the qualities which make for the ideal in medicine and in citizenry. He said that many of our best men had been so honored but that too often honors had been bestowed upon men who had made no worthy contributions to scientific programs and whose ethical standards were far from what they should be.

Be this as it may it will not come remiss to be reminded that each year our various medical societies have honors to bestow and that as a matter of fairness to the individual and justice to the societies the recipients of such honors should be chosen from the ranks of the faithful. There are men in obscure localities in our state whom the societies should delight to honor. They should be so recognized because of their true value to the profession and to the community in which they give of their best. They will not seek honors at the hands of their colleagues; they are engaged in more serious business—that of relieving suffering and prolonging life; but they are worthy of the highest recognition within the power of organized medicine to bestow.

Two such men have recently passed away and it is a source of the greatest satisfaction that our State Medical Association gave them in their day the recognition that was their due. They were men of sterling qualities. Their lives were devoted first to the honorable pursuit of their profession and second to the upbuilding of their community and state. Their influence for good was not limited to the field of medicine where they were conspicuous for their wisdom and their skill, but more than all this they were leaders in every good and worthy movement in their community. Organized medicine honored them, hosts of friends honored them and when their labors were at an end and they were carried to their last resting place, the business of their respective towns was suspended, schools closed and the folk of the village reverently and sorrowfully laid them away.

There are many such men in our state who are actively engaged in the practice of medicine. We owe it to them; we owe it to our medical organizations to search them out, that we may give them the recognition which they will not seek however deserving they may be. —Palmer Findley

---

THE ELECTRONIC THEORY AND THE OSCILLOCLAST.

During the past six months members of the profession have approached the editor with suggestions that something awful should be visited upon the heads of those members of the Nebraska State Medical Association who are using Abrams' Oscilloclasts in their practices. The suggestion was always accompanied by the inference that the apparatus is worthless and its use by a physician constituted the most arrant quackery. While agreeing with the contention that the apparatus is not what is claimed for it, the writer has heretofore contended that the profession was not in position to definitely prove its utter worthlessness and has, therefore, counselled patience.

Articles in the Dearborn Independence of Feb. 24, 1923, and March 3, pretty thoroughly dissect Abrams, the electronic theory and the oscilloclast. Two leading electrical engineers on the Pacific Coast are quoted as having dissected the machine, and found that no current appreciable to the most delicate galvanometer passes through the machine, that the wiring of the interior of the machine is such that no current could pass through and that there is more electricity in a handshake than is delivered by the machine.

Supplementing and thoroughly clinching what the Journal of the A. M. A. has said about Abrams and his machines there does not seem to be any good reason left for any reputable physician using the Abrams treatment, after this exposure.

THE AMERICAN PUZZLE.

By this name, Dr. C. W. M. Poynter, speaking before the Omaha Douglas County Medical Society, characterized the question of our pre-Indian forebears in this country. The data for its solution, which has been accumulating since the Neanderthal man was discovered in 1856, but especially in the past twenty years, may be briefly summarized as follows: The date when a race resembling the Neanderthal man lived in Europe may be placed at about five hundred thousand years ago. American relics do not go back nearly so far. While the precursor of the apes originated in America, there is a great gap in the biological chain, and it seems probable that the earliest human inhabitants came to this country by the frozen Bering Strait or possibly to South America by the Pacific Islands. The work of Dr. Robert Gilder has probably brought to light our earliest inhabitant, who cannot be dated back further than to forty thousand years ago. The mammoth bone adorned with human carvings found in Missouri is good evidence of human habitation just before the last great ice sheet. The skull found by Dr. Gilder points to a race related to that which formed the second invasion into Europe. Its heavy supraorbital ridges are like those of the Neanderthal man, but the nose is of the Cromagnon type. It shows no relation to any Indian or Mongolian race. Eight such skulls have been found in Nebraska, whose only counterparts are two Japanese skulls of a pre-Mongolian type. These eight skulls are in the Nebraska Museum. Their original owners represent an invasion by Bering Strait as far east as the Missouri river.

The next type of which we have any knowledge is a round-skulled race which has no prototype in European remains. Its relics are found in the stone mounds of Tennessee and up the Missouri Valley from Arkansas to South Dakota. It was a slighter, less robust race, probably from Asia, but not related to the Indians, Incas, Aztecs, or to the mound builders. Its date is about ten thousand years ago. The Indian period begins with the Toltecs in Mexico. All of their relatives, including the present Indians, are of distinctly Mongolian cast, related to the present Mongols of Siberia and the natives of Polynesia, whence they possibly came by way of the Pacific Islands. The Aztec period was probably not over three thousand five hundred years ago.

Before Dr. Gilder began his work in 1907, nothing was known about the archeology of Nebraska. Dr. Gilder gave some more intimate details of ancient Nebraska life, as revealed by his work in the houses which are found along the river bluffs from the Platte to South Dakota. These circular depressions, thirty-five to one hundred thirty-five feet in diameter, which were formerly called buffalo-wallows, proved to be the dwellings of a human race of fairly high civilization, probably much higher than that of early Indians. The holes on excavation proved to have been originally rectangular and have niches for poles at either end which probably were the supports of a ridge-pole and gabled roof. Beneath the floor of each are one or more deeper holes or caches, where family belongings were kept. The larger homes had more caches, twenty-one having been found in one large one, and each cache possibly represented the store-house of one family. The houses are isolated, never in villages. The holes are dug by highly polished buffalo-scapulas, to which some sort of handle was evidently attached and these tools, with many others, are found in the caches. Human remains were found in some of these houses under circumstances which point strongly to the custom of cannibalism in their owners.

—S. R. Gifford.

CASE MANAGEMENT.

We cannot be reminded too often of the best relationships between ourselves and those visiting us for the relief of some mental or physical affliction, that is conducive to the best results in the management of their cases.

Primarily, the patient calls upon the physician or surgeon for relief. It is during the initial visit when we establish ourselves in such a relationship, that any advice which we may give, or any therapeutic measure which we may employ, will impress itself upon the consciousness of the patient with its importance. Hence a better carrying out of instructions with better results.

A good psychology is essential for an honest interchange of questions and answers necessary in history taking. Many gain this by personality, others by good previous results or reputation in the community as a man, etc., but without an expression of honest-to-goodness interest in the case our beginning responsibility is a failure.

While our final judgment will depend upon the physical findings, the chemistry and the microscope, as well as functional tests, yet there is the tendency to forget the patient as an individual, and the fact that there are other considerations, namely, those of relationships that play an important part in bringing the relief which the individual seeks.

Once having assumed the responsibility of the case the patient expects treatment. With our modern emphasis for rational living and the use of methods other than drugs (the laity's conception of treatment) the expression "management" fulfills our need more than the word "treatment." It gives better expression to the patient, more especially in the long drawn-out cases.

Too often does the busy physician slight this initial work when it would be better (conditions warranting it) to have the patient at such a time as he could give his undivided attention to the case.

Having impressed the patient that his or her case is one of management, it is but fair that the cost to the patient be considered. At the beginning we can all give a fair estimate, and in justice to the patient as well as ourselves, a fee may be set for the entire period as based upon the technical work and the prognosis. In doing so the patient's mind is at rest as to the financial side, and they will report for observation with more willingness, and free from the dollar and cents side of the problem.

—Stanley Clements.

THE TEETH

Since the early eighteen hundreds doctors have had continually to face the problem of deciding whether certain conditions of the teeth either caused or affected many systemic ailments. Then if certain teeth were pronounced guilty the decision had to be made as to what to do with these teeth. A few years ago the work of Dr. Frank Billings and his coworkers on focal infection, added great impetus to this question. As a result both the medical and dental professions became divided into two camps. One favoring the extraction of all diseased and suspicious teeth; and another, who, either refused to believe, and practically ignored the teeth, or who, while believing that the teeth were at fault, would not accept the doctrine of wholesale extraction and did every thing possible to save all diseased and questionable teeth. This state of affairs has prevailed ever since, and the writer believes that much harm has been done by both types of men. There is no question that many patients have been allowed to suffer unnecessarily because their doctor failed to have their teeth properly taken care of. On the other hand many patients have been harmed by having their teeth pulled without a real cause having been proved, and thus having the masticating function lowered, when they needed it to handle the food necessary to build up their strength.

In a recent article in The Journal of The American Medical Association, Dr. A. D. Black of Chicago discusses this situation and in the writer's opinion goes a long way towards solving it. He gives very definite rules for arriving at a diagnosis, and says that a failure of diagnosis is in the main responsible for the trouble we have gotten ourselves into. Certain teeth should be extracted; certain teeth, even though offending, are amenable to treatment, and if treated will cease to be offenders; others though dead can be left alone. He bases his decisions on the condition of the cementum and the peri-apical tissues and insists that a correct diagnosis can be made, and if made, will give the answer to our troubles.

—R. B. Adams.

HEREDITY IN CANCER

To the Editor: I have in course of preparation a paper discussing the part played by heredity in cancer. This is a very important subject. In the bulletins sent out by that most valuable organization, The American Society for the Control of Cancer, the statement is emphasized that "Cancer is not inherited." This is contrary to experience and advanced scientific animal experimental work, and in my opinion detrimental to the public welfare. That cancer is rapidly increasing is not born out by the studies of the statisticians of the large life insurance companies. More accurate diagnoses proven on the operating table and on post-mortem explain the apparent increase. The public should be told this fact to prevent unnecessary anxiety, fear and unhappiness, and to protect it from the charlatan.

I would be very grateful to my colleagues who may read this if they would write me, if, in their experience and knowledge of families of their clientele, there have been two, three or more cases of cancer occuring directly, or skipping a generation,—as from grand-parents to grandchildren,,—and whether or not the disease followed in line of either or both lineal descendants, i. e., the male or female. I will very much appreciate any information given me, and if desired will credit it in any way suggested.

Fraternally yours,
John E. Summers, M. D.

THE SAN FRANCISCO CONVENTION SESSION OF THE AMERICAN MEDICAL ASSOCIATION AS A STARTING POINT FOR VARIOUS TOURS

The California Convention Headquarters of the American Medical Association. working with the various tourist agencies, civic and commercial organization, is arranging plans whereby the San Francisco Convention will be the starting point for a number of tours:

One of these will be a three weeks' trip to Honolulu, on a special boat touching at all of the principal ports, including the Leper Colony, and returning to San Francisco.

Another trip under contemplation is up the West Coast of the United States to Alaska and return, allowing returning passengers to leave the boat at Vancouver and travel over the Canadian Pacific East, or at Seattle over the Great Northern Railroad; at Portland and thence East by a number of lines or to San Francisco and Los Angeles or San Diego and back East by any of the numerous lines; or connecting at San Francisco with boats that will return East through the Panama Canal.

Arrangements are also being planned by which persons may begin an entire Oriental tour, starting from the Convention a day or so after its close. These trips will include Japan, China, the Philippine Islands and return to San Francisco, or may go on through the Suez Canal and Europe.

In fact, any and all sorts of combinations of tours to take up as much vacation as one cares to use and to any part of the world will be one of the features easily arranged in connection with the Convention.

Persons interested in any of these points or in any other matters connected with their trip to California are requested to write W. E. Musgrave, Chairman of the Local Committee of Arrangements, 806-809 Balboa Building, San Francisco.

PHYSIOTHERAPEUTIC WEEK IN KANSAS CITY

The fifth annual meeting of the Western Electro-Therapeutic Association will be held in Kansas City, Mo., Thursday and Friday, April 19 and 20, under the presidency of Dr. T. Howard Plank of Chicago. A cordial invitation is extended to the medical profession.

Preliminary program:

President's address, Dr. T. Howard Plank, Chicago.

High Frequency Currents, Dr. J. E. C. Waddington, Detroit.

Paper, title unannounced, Dr. H. H. Bowing, Rochester.

Actinic Ray Therapy in Surgical and Gynecological Work, Dr. A. Davis Willmoth, Louisville.

Demonstration Radiotherapeutic Technique, Dr. L. A. Marty.

Iliel Stasis and Restoration of Ileocecal Incompetency (lantern slides), Dr. F. H. Morse, Boston.

Colitis; Causative Factors and Therapy, Dr. Curran Pope, Louisville.

Physiotherapy, An Adjunct to Orthopedic Surgery, Dr. J. E. M. Thomson, Lincoln, Neb.

Blood Pressure Interpretation, Dr. B. B. Grover, Colorado Springs.

High Frequency Currents (with demonstration), Dr. Omar T. Cruikshank, Pittsburgh.

Radium Therapy, Dr. Sanford Withers, Denver.

Paper, unannounced, Dr. E. H. Skinner, Kansas City, Mo.

The Western School of Electro-Therapy will hold its fifth annual session. under the direction of Dr. B. B. Grover and associates, Monday, Tuesday and Wednesday, April 16, 17 and 18. On Wednesday evening Dr. Pope will give a lecture on "Mendelian Heredity" (color lantern slides).

An elaborate exhibit of physiotherapeutic apparatus will be held in the lobby of the theater, and this feature alone will be worth a trip to Kansas City.

Clinics and demonstration of technique each afternoon and evening. For program address the secretary, Dr. Charles Wood Fassett, 115 East Thirty-first street, Kansas City, Mo.

THE SOCIETIES

At the mid-winter meeting of the **Elkhorn Valley Medical Society,** January 21, at Hotel Pathfinder, Fremont, Dr. Morris Nielsen, Blair, was elected president for the ensuing year.

The society went on record in favor of a policy of joint meetings with the Fourth Councilor District Medical Society every fall. the meetings to be held at some point within the Fourth Councilor district.

At the annual meeting of the **Lincoln County Medical Society,** the following officers were elected: Dr. T. J. Kerr, president; Dr. Geo. B. Dent, vice-president; and Dr. J. B. Redfield, secretary-treasurer.

The **Custer County Medical Society** at the annual meeting elected Dr. J. D. Wilson, president; Dr. P. H. J. Carothers, vice-president; and Dr. G. I. Sellon, secretary-treasurer.

The annual meeting of the **Boone County Medical Society** was held at Albion on March 2nd. Officers for 1923 were elected as follows: Dr. F. J. McRae, president; Dr. J. E. Davis, vice-president; and Dr. F. M. Barns, secretary-treasurer.

The **Richardson County Medical Society** elected the following officers for 1923: Dr. Chas. L. Hustead, president; Dr. Geo. W. Reneker, vice-president; and Dr. Oscar F. Lang, secretary-treasurer.

NOTES ABOUT THE DOCTOR.

Dr. F. A. Brewster, formerly of Beaver City, has moved to Hastings.

Dr. W. O. Bridges, Omaha, returned early in March from a trip to Cuba.

Dr. and Mrs. J. P. Lord, Omaha, went to Florida early in March to spend a few weeks.

Dr. Paul Black, Lincoln, has become associated with Drs. Welch, Rowe and Lehnhoff.

Dr. E. H. Worthman, Louisville, has recovered from an extended siege of the grippe.

Dr. C. P. Fall, of Beatrice, has been elected president of the local Knife and Fork Club.

Dr. P. R. Schlumberger, Oakdale, who has been very ill with pneumonia, is slowly improving.

Dr. and Mrs. Sanford Gifford leave in April for Vienna, where Dr. Gifford will spend a few months in study.

Dr. A. B. Tashjean, of Norfolk, has returned from Chicago where he underwent an operation for a fractured shoulder.

Dr. H. H. Warner, formerly of St. Paul, Minn. and Kansas City, Mo., has associated himself with Dr. M. G. Wohl, Omaha.

Dr. R. H. Foster, of Tilden, has accepted a position as pathologist in the Louisiana State Hospital for Insane at Pineville, La.

The home of Dr. L. A. Dermody, Omaha, was recently ransacked and jewelry and clothing to the value of several thousand dollars taken.

Dr. Arthur J. Griot, Chadron, will leave this month for Vienna and Budapest to take several months of special work in eye, ear, nose and throat.

The Association extends sympathy to Dr. W. N. Anderson, Omaha, in the death of his mother; and to Dr. H. A. Johnson, Tekamah, in the death of his father.

A plan is under way in Ravenna to erect a monument to the memory of Dr. C. A. Hale, pioneer physician of that community, who passed away a few months ago.

In order to hasten his convalescence from an attack of grippe, Dr. and Mrs. F. A. Long have gone to California to spend the remainder of the cold weather, returning in the early summer.

A complimentary dinner was given to Dr. Irving S. Cutter at the Omaha Club on Wednesday evening, March 14th, in honor of his election to the presidency of the Association of American Medical Colleges.

Dr. Leon Asher, professor of Physiology, Berne, Switzerland, delivered a series of three lectures on The Physiology and Pharmacology of the Autonomic Nervous System at the University of Nebraska, College of Medicine, March 12th and 13th. The lectures were well attended, not only by the students and the faculty, but also by many other physicians interested in the subject.

NECROLOGICAL.

Dr. P. L. Hall, Lincoln, a graduate of Rush College in 1883, died at his home on March 14th, aged 73 years. Death was due to apoplexy. Dr. Hall was at one time a practicing physician, but for the last 30 years has figured prominently as a politician and one of the leading bankers of the state.

Dr. Albert S. Pierce, Omaha, surgeon general of the Grand Army of the Republic 1879-1899, died on March 9th, aged 83 years.

Dr. J. P. Sedgwick, Minneapolis, died at his home on Feb. 25th, aged 47 years. Dr. Sedgwick was well known in Nebraska, having lived at York with his parents and graduated from the University of Nebraska in 1896. The remains were buried at York.

RESOLUTION OF CONDOLENCE

Adopted by the Elkhorn Valley Medical Society, Fremont, February 21, 1923.

Whereas, God in His infinite wisdom has removed from our midst our fellow co-workers and honored members of this society—Drs. Leander B. Smith of Fremont and Charles Inches of Scribner,

Therefore, be it resolved that the Elkhorn Valley Medical Society, now in session, offers its sincere sympathy to the bereaved families in this time of sorrow, and that these resolutions be spread on our records and published in the Nebraska State Medical Journal.

A. P. Overgaard,
Andrew Sinamark,
Czar C. Johnson.

BOOKS RECEIVED

Nursing and Nursing Education in the United States. Conducted under the Supervision of Representative Medical and Nursing Educators. Cloth. Price $2. Pp. 585. New York: The MacMillan Company. 1923.

HERPETIC OCULAR LESIONS

(Kooy: Klinische Monätsblatter fur Angenheilkunde 1921:65).

Kooy has investigated cases of herpetic ocular lesions, and confirms the previous findings of Löwenstein. In twenty-two out of twenty-five cases of herpetic keratitis, dendritic keratitis and febrile herpes labialis he was able to produce herpetic lesions were usually present in the original lesions, but pure cultures were obtained by transfer to the suson the cornea of rabbits with material from the lesions. From the animal lesions, and three times from the original herpes labialis, he grew on a special medium a polymorphic organism which is believed to be the cause of both types of lesion. Other organisms, believed to be secondary invaders ceptible rabbit.

Doerr and Schnabel: Zentralblatt fur der gesamte Ophthalmologie: 1921:6, P. 163. These authors have obtained similar results by animal inoculation in herpes of the lip and cornea. In patients with herpes labialis they have found the organisms in the saliva, and have also found it present in patients between attacks, which would make it seem probable that it may be present in the healthy mouth and attack the lips at the site of any small abrasion.

ATLAS OF THE SLIT LAMP MICROSCOPY OF THE LIVING EYE

By Alfred Vogt, Berlin 1921.

This book which has appeared simultaneously in German, French and English translation is probably the most important contribution to ophthalmology which has appeared in the past twenty years. Koeppe's previous volume on the slit lamp, while important, was somewhat technical, had few illustrations, and was incomplete. This book is, as an atlas should be, principally illustrations (there being three hundred and seventy engravings of excellent quality) with enough text to explain them. To anyone first using the slit lamp, the book is indispensable as showing in detail, first normal conditions and then numerous pathological conditions which he may expect to find. The use of the slit lamp offers so many new opportunities for careful clinical and scientific observation of the inside of the eye under the microscopic magnification that its discovery may prove of hardly less importance than that of the ophthalmoscope. The translation is by Dr. Von Der Heydt of Chicago.

KERATOMALACIA.

D. D. Sanderson, M. D., Lincoln, Nebraska.

This case is reported not for the results obtained, but to call attention to a rare but disastrous disease or condition that might probably have been prevented by proper medication. A baby three days old was brought to the office by the alarmed father. The family physician who delivered the baby had just informed the parents that the baby had gonorrheal ophthalmia.

Family history negative; all venereal diseases were denied. Father had numerous examinations while serving in the army and navy all of which were negative. Mother's history negative except any scratch or bruise healed very slowly. No miscarriages, or premature labors. Two daughters, three and five years of age, in good health. Baby was born with normal labor, no instruments or stimulants being used. Silver solution was applied to the eyes. Three days after birth the parents noticed the baby's eyes were a little red, the family physician was called and obtained a smear without everting the lids. He returned soon and informed the family the baby had gonorrheal ophthalmia. He left a bottle of argyrol to be used in the eyes and departed. The father at once brought the baby to me.

First day, A. M.—Examination revealed a serum exudate retained by somewhat swollen lids. Marked congestion of the conjunctiva, cornea perfectly clear. A smear was taken of the secretion of each eye. Irrigation of one half percent acriflavin solution followed with irrigation of alkaline solution was used. The attendant was instructed to continue the irrigation every two hours. Laboratory report: Both smears diphtheroid bacillus.

First day, P. M.—Conjunctiva improved. cornea clear. A smear and culture was sent to another laboratory which reported very few staphylococci.

Second day, A. M.—Conjunctival congestion receding, cornea clear, acriflavin irrigation discontinued. Alkaline irrigation continued. Hot packs applied to eyes twenty minutes after each irrigation.

Second day, P. M.—Conjunctiva improving, cornea clear. Baby opens eyes of its own accord. Continued alkaline irrigation and heat.

Third day, A. M.—Conjunctiva practically returned to normal. Cornea clear. Fearing the laboratories had made a mistake in their findings, the alkaline irrigations and heat were continued.

Third day, P. M.—Conjunctiva clear, eyes easily opened, cornea clear except a very fine marginal haze at the junction of the cornea and conjunctiva. This abrasion was very faint. It completely encircled the cornea and was about one half a millimeter in width. It would not stain to either argyrol or fluorescin. A very mild application of trichloracetic acid was made over the affected region. Alkaline irrigations were continued every four hours and continuous heat.

Fourth day, A. M.—External appearance of lids was somewhat swollen and congested; unable to open eyes. Attendant was unable to open eyes or irrigate after midnight. Much secretion presented as lids were separated. Examination revealed both corneas completely sloughed off with nothing but space between the inner and outer eye. One lens had presented and laid in the conjunctival folds, the other remained in place. Specimens, smears and cultures were sent to two laboratories. The laboratories were also asked to check over their former reports. Both laboratories reported weak staphylococci and affirmed their previous reports.

During the following days the eyeballs retained their perfect form, the vitreus remaining in place and not becoming infected. Neither eye gave any indication of healing. Blood Wassermann examinations were again made of the father and the mother, both of which were reported negative. After using various modes, methods and applications for about a week with no improvement, the baby was given fifteen drops of a 25% solution of potassium iodide four times daily. The improvement that followed was very rapid. The corneal areas were completely closed in five days. The baby has developed perfectly and at present is considered normal. Both eyes retain their spherical shape with some protrusion of the corneal area.

Various authors have described this disease as a result of the many conditions in which the little patient is undernourished, characterizing it as a result of undernourishment of the cornea. In this case the baby was well nourished and apparently normal in every way with none of the symptoms that usually accompany the disease except those manifest in the eyes. Therefore, the logical conclusion would appear to be, either that the small amount of congestion in the conjunctiva had in some way shut off the nourishment to the cornea or that the patient had congenital syphilis as seems apparent by the rapid healing following the administration of the iodide.

ANNUAL MEETING, LINCOLN, MAY 15-17, 1923

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, May, 1923. No. 5

CONTENTS

	Page
The Medical Practitioner and the American Society for the Control of Cancer, J. E. Rush, M. D.	153
A Clinical Interpretation of a Systolic Murmur, Wm. N. Anderson, B. Sc., M. D., Omaha, Neb.	156
Common Clinical Arrhythmias, Warren Thompson, M. D., Omaha, Neb.	160
The Degenerative Heart or the Myocardium as the Prime Factor in Cardiac Disease, George W. Covey, A. M., M. D., Lincoln, Neb.	163
Common Problems in the Eye Disease of Infancy and Childhood, S. R. Gifford, M. D., Omaha, Neb.	165
The Treatment of Acute Sinusitis, George B. Potter, M. D., Omaha, Nebraska	168
Acute Gastritis, M. L. Wilson, M. D., Falls City, Neb.	170
Postgraduate Work in Diseases of Children in England and on the Continent, Floyd S. Clarke, M. D., Omaha, Neb.	172
Case Report, Miles J. Breuer, M. A., M. D., F. A. C. P., Lincoln, Neb.	174
A Case of Exceptionally Rapid Recovery Following Removal of a Spinal Cord Tumor, J. Jay Keegan, A. M., M. D., Omaha, Neb.	176
The San Francisco Session	177
EDITORIALS:—	
Change in Hours of Meeting	178
Discussion of Papers	178
Bring the Line Up to the Flag	178
Stiff Shoulder	179
Insulin	180
Dues	181
The Next Meeting	181
Nebraska State Medical Association Scientific Program	182
Important Notice to Members	183
American Proctologic Society	183
County Secretaries Conference	183
The San Francisco Session	183
The Societies	184
Hospital Notes	184
Notes About the Doctor	184
Necrological	184

THE MEDICAL PRACTITIONER AND THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER.

By J. E. Rush, M. D., Field Director,
American Society for the Control of Cancer.

Among the most important public health problems confronting the medical profession today is that of cancer control. It is possible to make a division of public health movements into several groups, depending on the amount of education work which must be carried out before the program can be successful. In one group we find such diseases as typhoid fever, malaria and yellow fever which may be controlled simply by educating a few individuals who possess the necessary power in a community, to place the program in operation after they have been shown the desirability of such a procedure. This type of activity is relatively simple because it depends upon the education of a few individuals. Unfortunately, the diseases that can be controlled in this manner are among those which usually do not exact from the populace the greatest economic toll.

Another group of diseases may be effectively dealt with through police power and here again we depend on the education of a few members of any given community. For the most part the diseases which may be controlled by this means we refer to as "communicable" and usually they can be very effectively dealt with by placarding, isolation and quarantine.

There is another group of diseases which are not communicable and in which the education of but a few members of the community is not sufficient to affect the mortality rate. Here, we find cancer, which depends for its ultimate control upon the education of every single adult of the community, with reference to the early signs and symptoms of the disease, for only in its early stages is cancer curable. With the present attitude of the public to seek medical advice, only when they are aware of distressing symptoms, they must be told that early cancer is usually painless and that proper treatment cannot be instituted until they have sought the advice of a physician.

The medical profession is interested in all types of medicine whether preventive or curative. As a matter of fact, there really is no hard and fast line of demarcation between preventive and curative procedures any more than there is a dividing line between the metals and the non-metals. The medical profession is interested in all problems of public welfare, but when it comes to matters concerning public health they are the only ones who through tradition and training are capable of handling the problems which present themselves for solution. It is the only profession, at the present time, that is engaged in real preventive medicine and it is the profession of election for this type of work. Usually public health movements have been initiated by the medical profession but in many instances the work has passed into the hands of the laity because the members of the medical profession have been preoccupied with other important problems.

What we have said with regard to the attitude of the medical profession towards public health work clearly emphasizes the need of control by the medical profession of all public health movements. The profession is particularly interested in the problem of cancer control not only because it is of great humanitarian interest but because of the further fact that cancer is one of those conditions in which it has been clearly demonstrated that the medical profession is the only one capable of offering a solution. While sanitary engineers, epidemiologists and others may be of great value in the conduct of specific public health movements their training and experience does not make them capable of helping in cancer control. The slogan of the American Society for the Control of Cancer that "Early cancer is curable if you will but consult your medical practitioner in time," again clearly emphasizes that the physician is the only one capable of reducing the mortality from cancer.

Another interesting feature of the movement for cancer control is that the establishment of diagnostic clinics during National Cancer Week is of some educational value to certain members of the medical fraternity, because important points of differential diagnosis between early carcinoma of the tongue, for example, and primary luetic ulcer, are demonstrated. The cancer movement, in this respect, is one of the few that attempts to repay the physician for the great effort he has expended in its behalf.

It has been claimed by some of the unthinking individuals among the laity that preventive and curative medicine are diametrically opposed. They do not realize that there is, in the last analysis, but little difference between preventive and curative measures. For example, all physicians take blood pressures and make urine analyses during the course of a pregnancy and not by the wildest stretch of the imagination can this be interpreted as a curative measure,—it is a preventive measure pure and simple.

Through various educational movements which are now being conducted to instruct the public with regard to conditions which are definitely preventable; the great mass of the people are gradually coming to realize that the physician must be looked upon as a teacher and advisor rather than one who is to be consulted only when symptoms of a diseased condition have manifested themselves. The physician, too, realizes that this teaching attitude is appreciated by the public for by this means he is able to prevent premature deaths among his clientele. Not only does he spare the patient in question for future usefulness, but, more important, he does not divorce the rest of the members of that particular family. The physician realizes that the most appreciative patient is the one who, through early advice and proper instruction, has been saved from untold suffering and an untimely death.

All health movements, if properly managed and ethically controlled by the medical profession, will not only eliminate certain objectionable features present in some of them as now conducted by the laity (who have no appreciation of medical ethics) but such activities will help consolidate the medical profession against the ever increasing influence of the cults. It is true, that we as a profession, do not heartily approve of certain public health movements now in progress, because they do not conform to our ethical code. If they were controlled by the medical profession this objection would be removed.

It must be realized that the cults never would have existed had the medical profession taken a definite stand against them, but realizing that "Imitation is the sincerest flattery," we have allowed them to go on:—to exploit the public until even the great mass of the people has recognized the lack of sincerity which prompted the various movements.

The proper extension of these ideas relative to organization in order to control public health problems contains within it the answer to the proponents of that preposterous type of activity known as "State Medicine."

The organization for cancer control is dependent upon the activities of the medical profession; and, therefore, the units upon which the organization is built are the state and county medical societies. The whole movement has been endorsed and approved by practically all national, sectional, state and local, medical and surgical bodies, because it is entirely controlled by the profession itself. In the perfected organization for cancer control, we have the ground work to handle other problems of a public health nature; be they ones already in existence or future ventures. By proper organization, too, we shall be in a stronger position to abort detrimental legislation, whether directed at us or to legalize the ignorant cults. A public health problem directed solely by physicians will do more to organize the medical profession properly than any other type of activity.

It has been pointed out that if we do not seriously consider the "scientific attainments" of the cults, then every preventable death is a reflection on us. It has been claimed that the fact that the patient did not come early enough to us for examination and advice is no excuse;—that we, as the only logical profession engaged in the practice of the healing art, should have the undivided confidence of the public to such an extent that they will report to us what are very trivial matters and thus give us opportunity to institute proper procedures in time. In the vernacular of the street, it has been suggested that we should "sell ourselves to the public"; which, in other words, means that there is at the present time a great need of ethical publicity on the part of the profession. It really seems that this would, to a very great extent, increase our usefulness to the community in which we practice. If this is true, then no physician can be so busy that he cannot devote a small amount of time to help in the campaign for cancer education, because by so helping, he is not only advancing his own usefulness to his community but is of the greatest value to his medical brothers and to his profession.

A few members of the laity have explained what they have interpreted as apathy on the part of certain of the medical profession toward preventive medicine, by emphasizing the fact that preventive medicine was diametrically opposed to curative measures. We, of the medical profession, realize the fallacy of this. Let us consider an analogy from the field of engineering. Suppose that ten engineers were bidding on a contract to construct a road between two adjacent cities. Only one could be successful; but would the others put obstacles in the way to prevent him from completing his task? The answer is apparent. They would not; for they would realize that when the public had seen the value of this road, they would demand similar ones in all other directions and, hence, the other engineers would have an opportunity to build some of them. I realize that the above example compares a business conducted purely for monetary return, to a profession which interests itself chiefly with humanitarian efforts, but the very few of the public who believe that all persons are actuated by ulterior motives should be answered. The good roads analogy applies directly to medicine, for the medical practitioner realizes that each time the public is convinced that it is unnecessary for them to suffer with various ailments they demand the removal of others which, heretofore, they patiently tolerated. An example may illustrate this point:—

A friend of mine, who for many years was almost an invalid from recurrent attacks of what was then diagnosed as "inflammation of the bowel" and for which, at that time, there was no known cure, was simply forced to allow the condition to exist, which undermined his health and lowered his efficiency.

At the present time, because of the knowledge of the laity concerning chronic appendicitis, he would know that an operation requiring him to be at a hospital for but two short weeks, would give him complete relief, and enable him to resume his life's work at a greatly increased efficiency.

Our medical ethics instituted at the time of Hippocrates admit of no change; but our interpretation of them may be broadened to meet the changing conditions; especially those which have been brought about during the past two or three decades. It may be necessary to change our ideas regarding proper non-personal publicity for the medical profession as a whole and for our state and county societies. In this connection I am reminded of the story of the young color-bearer at Gettysburg who had advanced somewhat ahead of the lines, and when ordered back to his position, by his commanding officer, replied, "Bring the line up to the flag."

A CLINICAL INTERPRETATION OF A SYSTOLIC MURMUR.*

Wm. N. Anderson, B. Sc., M. D., Omaha, Neb. Assistant Professor of Medicine, University of Nebraska, School of Medicine.

While stationed at one of our army camps where routine cardio-vascular examinations were being conducted by medical officers of considerable diagnostic experience I was surprised to find such a marked difference of opinion in regard to the interpretation of a systolic murmur. At this particular camp the examining board was divided into two groups in order to facilitate the work. Each corps of officers examined approximately the same number of recruits, who were living under the same circumstances and came from a similar locality. Strange to say the report of a single day showed at one station the rejection of twenty-three cases for mitral insufficiency with notation of three additional cases of accidental systolic murmurs. At the second station only five cases of mitral insufficiency were rejected, but eighteen more recruits were found who showed a systolic murmur, but who were accepted without restriction. One can safely consider that the exactitude of diagnosis was as good in one group as the other, but the interpretation was faulty in one.

At one of these camps I kept a record of cases that showed any signs of cardio-vascular abnormality, not only valvular diseases, but irregularities, changes in sounds, accentuations, hyperthyroidism, nephritides, etc., three hundred seventy-six in all. A review of these records has been very interesting. I found a notation, for instance, of 193 cases, or 51%, that showed a systolic murmur. This abnormality is then by far the most common extraneous sound that can be heard over the heart and its interpretation therefore is a matter of first importance. It immediately brings to mind the expression once made by a noted physical diagnostician, "When one studies the circuitous route through which the blood courses through the heart in a single cardiac cycle one wonders why murmurs are not always produced."

In the past two years I have had opportunity to study 253 returned soldiers who have presented themselves for symptoms referable to the heart and I find a notation of systolic murmur in 98, or 39 per cent of them. Approximately one-half of these 130 had been told they had valvular heart disease by medical officers or civilian physicians and yet the diagnosis was confirmed in only 38 per cent. We are quite right, I believe, in assuming that the diagnosis of valvular heart disease was made upon a systolic murmur which later had either entirely disappeared or was subsequently considered immaterial.

With this remarkably poor showing in the interpretation of a simple murmur, particularly when symptoms of palpitation and precordial pain are present, one can very easily appreciate the reason for the tremendous criticism that the veterans bureau is now receiving. It seems that a large part of these symptoms are signs of the emotion of fear that, unconsciously I hope, has been projected into the case by the physician.

Let us see then if we can determine some of the different types of systolic murmurs that may be heard over the heart.

STETHOSCOPE NOISES.

When in the examination of a patient with a long slender chest in whom the interspaces are wide, one places the stethoscope over the apex of the heart in such a manner that one edge is applied more deeply than the other, a murmur, systolic in time, can be heard. This is similar to the sound heard in the anticubital fossa when the stethoscope is carelessly applied in taking the blood pressure.

---

*Read before the Elkhorn Valley Medical Society, Fremont, Neb., Feb. 21, 1923.

There is another type of stethoscope sound made when, in a similar type of chest, the apex is circumscribed and the bell of the stethoscope envelopes the whole of the impulse. This is, no doubt, a conduction sound similar to the sound produced in the stethoscope when the bell, applied lightly to a thick muscle, is suddenly pressed deeply into the tissue.

CHEST DEFORMITY.

Extraneous sounds that may depend upon similar conduction mechanisms, as those just mentioned, probably exist in the deformed chest. I refer here to the individual who has quite a marked scoliosis and in whom the heart must be out of its usual position to fit into the new anatomy. It is in these cases that systolic murmurs are very commonly found and after years of observation I have never been able to find that a definite cardiac lesion existed.

CARDIO-RESPIRATORY MURMUR.

Inasmuch as the heart during its systole occupies a smaller volume in the mediastinum than during diastole it is but just to assume that the most flexible organ near to it should show this pressure. In accordance one finds that the lingula of the lung, i. e. that portion which overlaps the heart, is expanded a little more during systole than diastole. We are well aware that air entering the alveoli gives a vesicular murmur and it seems to me that we are right in assuming that the air entering with increased rapidity during systole would give a murmur. During diastole, as the movement is more or less inactive, there is no sound heard.

Neither does one always hear the movement of air in this lingula for one is more prone to find it in the thin chested individual than in the full chested one. In such a case the systolic murmur may even be heard at the tip of the scapula behind, being due to the same cause in the base of the lung. Naturally enough, if the murmur is respiratory, and if that portion of the lung can be made to recede away from the front of the heart as in deep expiration, the murmur will disappear. This is one of its characteristics as well as the disappearance on change of position. It is naturally heard along the left border of the heart and may even extend to the pulmonic area.

HEMIC MURMUR.

It has not been my custom to consider a murmur a hemic one unless there is a very definite anemia present. In such an instance, as for example, pernicious anemia, no matter how loud or universal the murmur may be, I am never inclined to give it any importance. I do not consider, with some, that this murmur is due to a stretch of the auriculo-ventricular ring for it is too often unaccompanied by any other manifestation of cardiac failure.

ACCIDENTAL PULMONIC MURMUR.

There is a murmur that is at times heard over the pulmonic area which may be very loud and prominent, present on any and all examinations, which is exceedingly difficult of explanation. It is indeed in "The Area of Romance" for one may advance any hypothesis for its explanation. It is considered by some to be due to diseases of the papillary muscles and to those, therefore, it is a definite heart entity. By others it is considered as a dilatation of the valve ring and would accordingly be part of a disease of the heart. I have never found any signs of failing heart connected with it. To me there is no satisfactory explanation for its occurrence and I am inclined to place it under the head of accidental.

CONGENITAL SYSTOLIC MURMURS AT THE BASE OF THE HEART.

One at times finds very loud murmurs at the aortic and pulmonic orifices which are so prominent that one hesitates to call them functional, and yet they are unaccompanied by any change in the size or working capacity of the heart. I have been in the habit of classing these as due to congenital change in the conformation of the large vessels. I have no proof of this theory as I have never seen one of these cases come to cardiac failure or autopsy. When such a murmur is accompanied by a palpable thrill, which feels to the finger like the purr of a kitten, one should never hesitate to consider it a congenital defect and time will prove it to be such.

MURMURS ACCOMPANYING HYPERTHYROIDISM AND TACHYCARDIA.

Whenever the heart rate is increased above 100 the auscultatory findings become correspondingly more erroneous and often one will find in these instances that a systolic murmur is present. A good rule to follow is to disregard any murmur that is heard in a rapid heart until opportunity presents itself to study the same under more advantageous circumstances when the rate is slower. The murmur should be particularly disregarded in hyperthyroidism. Inasmuch as a widespread vasomotor relaxation is evident in all of the vessels in hyperthyroidism, one must consider the same phenomenon present in the large vèssels as well. The murmur is more or less analogous to that which may be heard over the enlarged thyroid itself.

THE SYSTOLIC MURMUR IN ACUTE INFECTIOUS PROCESSES.

I hesitate to attempt a discussion of this most important group, as the proper interpretation of a murmur heard in the course of an acute infectious process, particularly when due to the streptococcus or diplococcus group of micro-organisms, cannot be too carefully made. The incipiency of valvular endocarditis must necessarily reveal itself only in murmurs before there have been compensatory changes in the size of the heart and when heard should always be considered by the physician as of importance until continued rest has disproven it. This is particularly so in acute articular rheumatism, chorea, scarlet fever, pneumonia, or general sepsis, and even more so if the temperature continues. As I look in retrospect on some of these instances, in which such a finding was misjudged, I have later found unmistakable valve damage that would have been greatly minimized by the institution of continued rest. On the other hand, I have seen a number of others where subsequent examination has failed to reveal any damage to the heart or when present it is minimal. On the other hand, I cannot help but feel that a great injustice can be done the patient by injecting the element of fear unless this is necessary for his cooperation.

MURMURS OF PERICARDIAL ORIGIN.

These are of three kinds. First the pericardial rub of acute fibrinous disease. Usually this is neither systolic nor diastolic, but part way between either. A good way to remember this murmur is to assume that when it is difficult to place a murmur in either of the phases of the heart it is pericardial.

An other is a systolic murmur when there is an adherent pericardium. This is not unlike an endocardial murmur and mitral disease is nearly always diagnosed.

There is another less important systolic murmur that is heard at times near the base of the heart which is only present during deep inhalation and then takes on a musical sound. It is undoubtedly produced by small pericardial adhesions that distort the large vessels, but which never produce cardiac failure.

THE SYSTOLIC MURMUR IN ORGANIC DISEASE OF THE HEART.

A systolic murmur is certainly heard in true disease of the heart. In the first group of cases, in 146 of which valvular heart disease was present, a systolic murmur was found alone or in association with other signs in 64 per cent.

In the second groups of ex-soldiers there were 86 cases of cardiac disease and a systolic murmur was found in 58 per cent of them.

We are forced to conclude that when considered by itself the finding of a systolic murmur adds little to the basic diagnosis. Therefore, when it can easily be explained it may be considered, but unless it can be so explained, it should be entirely disregarded. Let us first consider those murmurs in association with aortic disease.

In aneurism there is present a systolic murmur, but with it a diastolic bruit and little more is necessary for its recognition.

In aortic insufficiency, there is at times a systolic murmur present. Its presence does not necessarily mean a combined mitral lesion and such is not present unless there have been two attacks of rheumatism, in which instance, the mitral involvement is the primary one and the aortic an extension of the disease process.

In aortitis there is often an onward murmur over the aortic area. In such an instance an aortic stenosis is assumed, but such really does not exist unless there is a definite pulsus tardus present. A stenosis of the aorta is exceedingly uncommon. In such cases one often hears a systolic murmur at the apex and I have seen a large number of these cases that had been diagnosed mitral disease. This is erroneous as the murmur is either one transmitted from the base or is caused by a heart muscle change due to concomitant coronary disease.

The murmur of tricuspid insufficiency is not difficult of interpretation for it is heard over the right side of the heart and is accompanied by a positive venous pulse and pulsating liver.

The discussion of mitral disease has purposely been left till last for it is to correct the general impression that a systolic murmur is produced by mitral insufficiency that this paper is presented.

Most text books tell us that mitral insufficiency is the commonest of the valvular lesions yet upon the present conception many of the army examiners found that mitral stenosis was the commonest lesion found, aortic insufficiency second, and mitral insufficiency a low third.

If now one reviews those in which the only abnormal auscultatory sign was a systolic murmur there were in the first group 153, in 33 per cent of which a diagnosis of mitral insufficiency had been made; whereas in the second group in 66 occurrences of the murmur 25 per cent only were diagnosed mitral insufficiency.

But I had collected these figures early in the war, and I was anxious to see if added experience had changed accordingly. I went over the records of these 51 cases of so called mitral insufficiency, and, much to my surprise, I could find only 17 that could be considered unmistakably mitral whereas the others were doubtfully valvular. This would only allow 11 per cent instead of 33 per cent of the systolic murmurs, per se, to be explained upon the basis of mitral insufficiency.

In order, therefore, to hit upon a decent exactitude in the diagnosis of mitral insufficiency one must have, in addition to a systolic murmur, a definite enlargement of the heart as shown by the location of the apex beat, an absence or change in the first sound on the left side of the heart as contrasted to the right side and a history of acute articular rheumatism or chorea.

The secondary changes of inflammation lead to fibrosis and contraction which results in stenosis of the valve, which condition is distinctly more grave clinically and its effect upon heart muscle efficiency exceedingly more important. Therefore, the only cases of insufficiency that one finds are those in which the disease was minimal so that the subsequent contraction produces no stenosis or in minor lesions that have not yet extended into a contraction. Mitral insufficiency, when uncomplicated, never decompensates and when such cardiac failure does result there have been other changes taking place in the heart. If perchance one does mistake a systolic murmur, considering it accidental, when it is really valvular, no great harm is done the patient.

We have too long applied our stethoscopes indiscriminately to the heart and listened for what? I believe that about all was a systolic murmur. I hope I have shown you how fallacious is this examination.

From any group of statistics one finds disease of the heart present on the left side in over 90 per cent of instances. Therefore, the right first sound of the heart should give us the normal systolic sound. With this the left systolic sound can be compared. We should begin auscultation near the left border of the sternum over the right ventricle, determining which is the systolic sound and compare this with the first sound as made by the more often diseased left side. There may be murmurs present but they should be disregarded and studied later by themselves.

One should next pass to the pulmonic area and contrast the 2nd pulmonic sound, that diastolic sound made by the right heart, as contrasted with the second aortic sound as produced in the left heart.

Our next move is to study the diastolic sound carefully for extraneous sounds or murmurs passing along a line from aortic area to apex. There are no diastolic murmurs ever present except those produced by real heart disease in marked contrast, therefore, to those produced in systole. For example, whenever one hears a musical loud systolic murmur over the heart his attention should be directed to diastole, and unless he uses this method of auscultation he will fail to discover that low pitched diastolic murmur of aortic insufficiency which is so often present. In this instance the musical systolic murmur has no significance in itself except to direct one's attention to the diastolic murmur and the aortic insufficiency which is invariably present. After all of the auscultation has been completed a study of extraneous sounds in the systole is made, and, a search for change in the size of the heart, or other evidence of cardiac disease. If, on the other hand, they do not easily fall into a clear cut diagnosis, and if there is no change in the size of the heart, they should be considered entirely accidental. With these criteria one will be surprised how often they are really of no significance.

In conclusion, therefore, let me admonish you against making the diagnosis of valvular heart disease upon the finding of a systolic murmur without other evidence of cardiac disease.

Further, one should skill oneself in listening to the other auscultatory signs in the heart in a routine fashion, never failing to take into consideration changes in size and shape of the organ as discovered by inspection, palpation and percussion.

And finally let me read to you a small portion of Circular No. 21 as sent out from the office of the Surgeon General July 4th, 1917.

"The examination should in all cases include:

1. Location and determination of character of apex impulse.

2. Auscultation of the heart sound over apex, lower sternum and second and third interspaces to right and left of sternum, noting accentuation of sounds and murmurs.

3. Inspection of root of neck and upper thorax and percussion of first interspace on each side of manubrium for evidence of aneurism.

4. Count of radial pulse, observation of its rhythm, and palpation of radial arteries for unusual thickening or high tension.

5. Exercise test: Hopping 100 times on one foot. At close count heart rate with stethoscope over apex, listening for murmurs and noting how long tachycardia and unusual dyspnea persist. After two minutes neither should be marked.

COMMON CLINICAL ARRHYTHMIAS.*

Warren Thompson, M. D., Omaha, Neb.

Probably no phase of cardiology is more fascinating and at the same time more confusing than that of the arrhythmias. With the introduction of graphic methods in cardiac diagnosis there has come a much clearer understanding of the clinical disorders of the heart beat. In the wake of this increased knowledge, however, has followed a decreased confidence on the part of many even to attempt a diagnosis of the various types of disordered heart action without graphic tracings. Too frequently patients are advised to change occupation, denied the advantage of insurance, or are made cardiac neurotics because of failure to recognize the benign types of arrhythmia, and on the other hand, lack of appreciation of the significance of the more serious types has led to serious consequences. That there are many pitfalls in the diagnosis of cardiac irregularities without the aid of mechanical devices, and that their use is advisable whenever feasible, is accepted. Yet, it is obvious that graphic methods of examination are not available for use in general practice.

No pretense is made at anything new or original, for much of the material in the following sentences is contained in text-books, but it seemed worth while to review some of the known facts whereby we can diagnose the common clinical arrhythmias by careful physical examination alone.

Inasmuch as an appreciation of disordered heart action depends upon an understanding of normal cardiac action, it might be worth while to review some essential facts before discussing the different types of arrhythmia. "The orderly sequence of muscle movements which constitute the normal heart beat is propagated from a single impulse born in the sino-auricular node. The contraction, starting from the mouth of the superior vena cava, travels rapidly through the auricle, reaches the auriculo-ventricular node and traverses this node and the bundle which is its continuation; it is distributed in an orderly manner amongst the mass of ventricular fibers in which it ends. The normal rhythm of the heart consists of a regular sequence of such beats, so that auricle and ventricle contract in proper time relation to each other. Each stimulus elaborated at the sino-auricular node requires a certain time of preparation, and this time of preparation is very constant under definite and given circumstances. It is relatively long, reaching two-thirds of a second when the heart is beating at a normal rate. Indeed, it is this time of preparation which controls the rate of a normally beating heart. A second characteristic of physiological impulse formation is regular repetition. Each impulse belongs to a regular or rhythmic series. The pacemaker is under the control of the vagi, or inhibitory nerves of the heart, and they normally exert a considerable restraining influence upon this stimulus producing center."(1)

---

*Read before the Elkhorn Valley Medical Society, Fremont, Neb., Feb. 21, 1923.

"Although any portion of the heart muscle is inherently capable of initiating contractions, the pace of the whole organ is ordinarily governed by impulses that arise from a single region, where the automatic rhythm is more rapid than in any other part of the heart muscle. Contractions initiated by this pacemaker spread to all parts of the heart and discharge the unstable compounds that are collecting elsewhere. The automatic rhythms of outside regions, therefore, do not become evident under normal conditions. If, however, by reason of impaired conduction, the entire heart is not discharged with each beat, an opportunity is afforded for impulses to be built up in the undischarged regions. This happens, for example, in the ventricles when the conduction of impulses from the auricles is interrupted. The function of the pacemaker may also pass from the normal to an abnormal site, whenever the inherent automatic rate of the latter exceeds the automatic rate of the former. This may occur because the formation of beats in the normal pacemaker is slowed, or because the formation of beats elsewhere is accelerated, or because a combination of these conditions exists."(2)

SINUS ARRHYTHMIAS

Sinus arrhythmias comprise the simplest type of cardiac irregularities. The commonest of these is the respiratory arrhythmia characterized by an acceleration of the pulse during inspiration and a slowing during expiration. Phasic variations of the pulse in which there is a slowing and subsequent quickening of the heart is sometimes associated with heavy doses of digitalis. Irregularities of the heart of mild degree, in which shorter and longer pauses are mingled indiscriminately, frequently occur in digitalized hearts of young rheumatic patients. These various types of sinus arrhythmia are considered to be due to disturbances in vagal tone. Sinus arrhythmias require no treatment and are of little prognostic import.

The importance of their recognition lies chiefly in their possible confusion with other types. Arrhythmias influenced by respiration are definitely of sinus origin. Likewise, irregularities occurring in young adults, in which there is a correspondence between the heart beat and pulse, and which are abolished by exercise, fever or atropine, belong to this group.

PREMATURE CONTRACTIONS

Premature contractions, or extra systoles, are beats which interrupt an otherwise normal heart action by occurring prematurely. They may be auricular or ventricular, the impulse arising from new foci in the muscle. In the ventricular extra systole, the normal auricular impulse finds the ventricle in a refractory state, the impulse, therefore, being wasted and as a result there is a delay equal to two cycles of the usual rhythm, the fundamental rhythm persisting. However, in auricular extra systole there is a response of the ventricle to each auricular contraction and as a result there is a disturbance in the fundamental rhythm, characterized by a long pause which, however, is not equal to two full cycles of the normal rhythm. The premature beat is usually weaker than the normal beat and the heart sounds vary with the strength, two sounds being heard at the apex if the aortic valves are opened and only one if these valves are not opened.

Premature beats occur at all ages, but most frequently after fifty years. Symptomatically, they affect patients differently, some being entirely oblivious to the disturbances, whereas others are annoyed by the long pause. Various causes have been ascribed to extra systoles,—as a peculiarity of the heart muscle of some individuals, as in horses and dogs where it is normal,—toxic agents as tea, coffee, tobacco, and digitalis, and lastly, in organic heart disease. The significance of extra systoles is often difficult to determine, for frequently they occur in otherwise apparently normal hearts, and again associated with organic heart trouble. "It is wiser to regard them as meaning some pathological change until the contrary is proved, than to make light of them and recognize the error later. The patient seen with extra systoles today may return with auricular fibrillation in two or three years."(3) Treatment should be directed towards the causative factor if determinable. Digitalis for this condition alone is not indicated. Sedatives such as bromides or luminal are often helpful.

It is important to remember that in all types of arrhythmias the heart rate should be determined with the stethoscope at the apex at the same time the pulse is counted at the wrist. Although it is difficult to differentiate between auricular and ventricular extra systoles without graphic methods, the premature contracting can be identified by noting that the absence of pulse at the wrist is not associated with corresponding failure of ventricular contraction.

HEART BLOCK

In this type of arrhythmia there is a disturbance of the function of the auriculo-ventricular bundle resulting in a delay (partial) in the conduction of the auricular impulse, or it may be blocked completely (complete heart block). Normally it takes about 0.2 of a second for the impulse to pass from auricle to ventricle. In the mild degrees of heart block, recognized only by the electrocardiograph, there is merely a prolongation of this interval. If the interval is more marked there is a dropped beat at the wrist. Varying grades of block may be observed, depending on the number of auricular impulses getting through, resulting accordingly in 2-1, 3-1 and 4-1 ratios. And finally, the block may be complete when the auricles and ventricles assume separate rhythms, the former about 72 and the latter about 30 per minute.

Age does not seem to be a factor in heart block, as it has been observed in the new born and in patients in the nineties. It frequently occurs in infectious diseases, especially rheumatism, diphtheria and pneumonia. Chronic heart block is usually associated with syphilis or rheumatic fever, and is always an expression of a serious myocardial affection.

The symptoms of heart block are variable, depending upon the degree of the block and the underlying cause. In the milder blocks, there is usually little complaint and they often pass by unrecognized. However, the more extreme types, constituting the Stokes-Adams syndrome, are characterized by a persistent slow pulse (below 40), cerebral attacks, and visible auricular impulses in the veins of the neck.

The milder forms require no treatment; however, a search should always be made for a causative factor to be removed, if possible. Digitalis, although theoretically contra-indicated, as it increases the block, should be used if decompensation exists. Excellent results from the use of adrenalin have been reported in recent literature.

Heart block should always be suspected when the rate is below 60, and a ventricular rate of 40 or less is almost conclusive evidence of heart block. Complete heart block is usually easily recognized, especially if the classical Stokes-Adams syndrome exists. Confusion at times arises in differentiating "dropped beat" of heart block from skipped beat in extra systole. In the former the heart remains silent during the pause, whereas in the latter the first sound is heard.

PAROXYSMAL TACHYCARDIA

This is a type of arrhythmia characterized by paroxysmal attacks, beginning and ending abruptly, in which the heart rate varies from 100 to 200 per minute. The impulses arise outside the normal pacemaker and essentially constitute a series of ectopic beats in which the ventricles respond to all of the auricular impulses, resulting in a regular heart and pulse rate. The attacks may last from a few seconds to days. They may occur at any age but are most frequent in young adults. The paroxysms are frequently precipitated by digestive upsets, exertion, and emotional disturbances. Although frequently unassociated with valvular disease, myocardial pathology should always be suspected.

The symptoms vary from a mere sense of consciousness of palpitation in the mild short attacks to those associated with cardiac dilatation in the severe protracted spells. The prognosis depends upon the condition of the myocardium as determined during and between attacks, and the severity and frequency of the paroxysms. As there is no specific remedy for paroxysmal tachycardia, many procedures, such as an ice-bag over the precordium, pressure over the eye-balls, induction of vomiting, etc., are suggested. If the attack is prolonged, rest should be provided for by hypnotics, as chloral and luminal. Lewis states that "where other remedies have failed, a full course of digitalis may ultimately improve the condition."

Recognition of paroxysmal tachycardia is difficult at times. However, the history of sudden onset of regular heart action at a rate above 120 and abrupt ending, combined with the fact that there is only a slight change in the pulse rate from recumbent to upright posture, are important in establishing a correct diagnosis.

AURICULAR FLUTTER

In auricular flutter impulses arise from a common focus in the auricle, apart from the normal pacemaker, causing the auricle to beat at rates from 200 to 350 per minute. There is usually an associated 2-1 heart block, with regular auricular and ventricular rates.

It occurs most frequently in elderly patients, in whom it is associated with myocardial disease. The symptoms are similar, although usually less severe, than those of paroxysmal tachycardia. The condition may last for years, Lewis citing a case in which the ventricular rate was constantly above 160 per minute. Occasionally the rhythm may return to normal. Digitalis in full doses is always indicated.

Auricular flutter is difficult to recognize without graphic methods; however, if the tachycardia persists for a month or longer, a presumptive diagnosis at least, may be made.

AURICULAR FIBRILLATION

Auricular fibrillation occurs when the normal stimulus production at the sinus node is abolished, it being replaced by multiple auricular foci of stimulation. In this condition the auricles are dilated and do not contract as a whole, resulting in rapid, lawless impulses, which produce a complete ventricular irregularity.

This condition is not uncommon, comprising about 40% of the cases showing cardiac irregularity. It occurs most frequently in mitral stenosis and myocardial disease, especially when associated with toxic thyroids and hypertension. Many of the ventricular contractions are not strong enough to produce pulse waves at the wrist and this difference between the pulse rate and heart rate is called pulse deficit—a condition often associated with auricular fibrillation. This type of irregularity has recently been given unusual study since the introduction of quinidine as a therapeutic agent. It is important that this irregularity be recognized, as it suggests serious heart trouble.

Auricular fibrillation is usually easily recognized by the rapid and absolutely irregular heart action. Furthermore, it can usually be differentiated from other forms of irregularity by the fact that exercise increases the irregularity whereas in heart block and premature contraction it is decreased.

PULSUS ALTERNANS

In this condition there is not a disturbance in rhythm, but an irregularity in the ventricular contractions so that large pulse waves alternate regularly with smaller ones. It is supposed to be due to a variation in the number of ventricular fibers contracting,

Pulsus alternans is quite common, occurring chiefly in uremia, hypertension, digitalized hearts and severe infections as pneumonia. If it is persistent, it is suggestive of serious heart trouble, for sudden death is not uncommon in this condition.

It is frequently determined with the palpating finger; likewise, it may be detected with the sphygmomanometer whereby only the large waves go through when the pressure in the cuff is increased, but both large and small waves go through as the pressure is decreased.

CONCLUSIONS

1. Although mechanical devices are indispensable in the accurate determination of certain types of arrhythmia, many of the common clinical disorders of the heart beat can be recognized by careful physical examination alone.
2. Recognition of the different types is important, as prognosis and treatment depend upon an accurate diagnosis.

REFERENCES

(1) Lewis—Clinical Disorders of the Heart-beat.

(2) Hewlett—Pathological Physiology of Internal Diseases.

(3) Osler & McCrae.

THE DEGENERATIVE HEART OR THE MYOCARDIUM AS THE PRIME FACTOR IN CARDIAC DISEASE.*

George W. Covey, A. M., M. D. Lincoln, Neb.

The term degenerative heart is somewhat ambiguous and might be taken as the theme of a discussion of the pathologic anatomy of the heart, of the clinical aspects of the failing heart or as the heart in degenerative diseases. I have chosen to consider here largely, the factor of myocardial degeneration in the failing heart.

---

*Read before the Elkhorn Valley Medical Society, Fremont, Neb., Feb. 21, 1923.

The basic symptoms and signs of heart failure are always the same: Breathlessness, edema, enlarged liver, and all the other signs of a failing circulation; likewise the basic factor in all cardiac failure is the same, namely the strength or weakness of the heart muscle. The amount of reserve and power of recuperation remaining in this muscle determines the effectiveness of our treatment and the prognosis in a given case.

The murmurs that we hear, the thrills that are palpable, the thrusts and retractions, the accentuations of sounds, the size and shape of the organ, the position of the apex, the irregularities of rate, force and rhythm, heart pain, etc., serve us in helping to visualize the pathologic anatomy. When we combine these findings with our history of past disease, our history of the present cardiac symptoms and our general physical findings, they help us formulate a guess as to the state of preservation and power of comeback of the one great factor in heart work—the myocardium.

We know that the heart muscle is subject to the same diseases as any other organ. Diphtheria, typhoid fever, and other acute infections may cause myocardial degeneration. This may be of the cloudy swelling type, or an active inflammation. Certain chronic infections, notably that of the gallbladder, are frequently accompanied by myocarditis. Toxic goitre produces heart muscle degeneration. In most of these affairs it is not possible to say clinically whether we are dealing with a real myocarditis or a degenerative lesion of the muscle fibres themselves.

Syphilis may attack the heart muscle directly or indirectly. There may be diffuse fibrosis or gummata in the muscle or there may be secondary effects of coronary involvement. These things are almost impossible to diagnose ante-mortem and are not of great clinical significance, except to remember that in syphilis the root of the aorta and the coronaries are often affected, and that the heart muscle suffers thereby and that there may be diffuse fibrosis of the heart muscle by direct spirochetal attack.

It is the rheumatic heart so-called, that is, the heart resulting from rheumatic fever, chorea or chronic tonsillar infection, in which we probably have to deal most frequently with an actual chronic interstitial myocarditis. In the experimental laboratory it is extremely difficult if not impossible to produce an endocarditis which does not have with it a myocarditis. In fact, often the myocardial lesions far overshadow those in the endocardium, and it is fair to assume both from the clinical and pathologic information at hand, that the same holds true to a large degree in clinical medicine. We are nearly past the day when the physician listens to the heart and proudly announces to the patient that there is a leaking valve. We know that the worst sort of a leaking valve, so-called, means comparatively little if we can prove that it is reinforced by a good competent myocardium, consequently when we hear a murmur we immediately begin to think, not of what is happening at the affected valve, but of how much has this patient's heart muscle been damaged, how much reserve has it and how well will it come back under treatment?

The pathologic anatomy in rheumatic heart muscle is that of fibrosis. In the acute stage the so-called Aschoff bodies are present but these are represented only by scar tissue in the later stages. This fibrosis does not differ from that due to other lesions. Oftentimes small amounts of fibrous tissue scattered diffusely through the heart muscle cannot be discerned grossly in these hearts, yet the damage is present. The gross or even the microscopical appearance of the muscle does not always betray the actual muscular weakness of it, and vice versa, a myocardium apparently greatly damaged may be surprisingly efficient in sustaining a competent circulation.

In arteriosclerosis we have the same factor to deal with, as far as the heart is concerned, except that here the myocardium may have no actual damage. We may begin with a perfectly normal muscle. It must hypertrophy to carry the extra burden of hypertension, but barring other accidents the heart itself will hold out as long as it is able to increase its working power by hypertrophy.

When all has been said, therefore, it matters little clinically what form of myocardial degeneration we are dealing with so long as we know what forms these may be and which is the most likely in a given case; it matters little what particular valve lesion we have at hand, though it is of interest to know, and knowing we can judge better of the myocardial possibilities and the load imposed on the heart muscle; it is of interest to recognize the various cardiac irregularities and know what lesions usually produce them or what lesion they accompany, how they may be set right, but the main consideration is what load they add to a diseased heart muscle. In other words, the first thought in heart disease is, what of the myocardium?

COMMON PROBLEMS IN THE EYE DISEASES OF INFANCY AND CHILDHOOD.*

S. R. Gifford, M. D., Omaha, Nebr.

In the opinion of almost every busy general practitioner, it is bad enough to have to look at an eye of any kind, but to have to look at the eye of a crying infant and tell what is the matter with it is adding insult to injury. It was with the possibility in mind of smoothing over some of these very rough spots in the doctor's life that I chose this subject for your consideration. For these infants are howling for a diagnosis of their trouble, which may range in importance from a foreign body beneath the lids to a disease threatening the sight and even the life of the child, and the anxious parents are hovering over the doctor to know, at once, whether he can relieve the trouble or whether they must consult an oculist for extended treatment, operation, or what not.

There are really four types of eyes which we see in children, according to the symptoms for which they are brought in. These are, first, the painful eye which cannot be opened to the light; second, the watery, discharging eye; third, the eye which apparently has poor vision without signs of inflammation, and fourth, the eye which squints.

The first class of cases is the most distressing to the examining physician, and the first problem which presents itself when one is confronted with a painful eye that is closed spasmodically at the approach of a light, is how to see the eye at all. In some children between five and ten it may be worth while to try the gentle arts of persuasion, flattery, or bribery. In nearly all children under five, however, and in many older ones, the problem is one of brute force intelligently applied. Nature has fortunately provided that if we cannot yell so loud, at least we are stronger than our unfortunate patients, and, as a rule, the ones who resist most obstinately are the smallest and easiest to manhandle. Our troubles reach their climax in the occasional cases of husky ten year old boys, who may require three strong pairs of hands to quiet them so that one eye can be examined. Having, if possible, removed the female relatives from the room, the father, seated on a chair, is entrusted with the child's feet and hands, while the doctor seated opposite to him, holds the head firmly between both knees, having both hands free to open the eye. Dry cotton held in the fingers prevents the lids from slipping while they are opened with the least possible pressure on the eye-ball, and a drop of 2% cocain is instilled by a third person, who also holds a good light. If this first drop is warmed slightly by passing the dropper through a flame once or twice, it will hardly be noticed, which is more important with older children who are just not crying. If the cocain is repeated once or twice, letting the child up for a minute between drops, the blepharospasm is lessened, so that the lids can be held open and after a little, the cornea will turn into view. A foreign body may be seen which can be removed by a toothpick or spud, when the child's troubles are at once over. A white infiltrated spot may be seen, the site of a corneal ulcer, which in infants, is usually near the limbus and of the type known as a phlyctenular ulcer. In this case the child will usually show a nasal discharge and enlarged cervical glands.

It must be remembered that serious injuries may have occurred to infants without any history of injury. A child four years old was seen recently who had been treated for "pink-eye" for a week before another braver man actually looked at the eye and found the serious condition which was perfectly apparent. When I saw him, the cornea was cut half across with a large prolapse of iris in the wound, and the mother then remembered that the child had begun to cry while playing with some scissors which were found on the floor. Another condition is often treated for pink-eye because a proper view of the eye is not obtained and this is interstitial keratitis. In the early stage, the cornea shows only a diffuse grayish clouding, which is in its deeper layers. Congestion and some degree of iritis are usually present, and the blepharospasm may be intense. Later the characteristic salmon-colored patch is seen and the new-found vessels in the cornea, but if the first cloudiness is seen and other stigmata of congenital lues looked for, the diagnosis may usually be made, and the severer stages may often be prevented.

---

*Read before the Ninth Councilor District Medical Society at Grand Island, Feb. 13, 1923.

If, in our case, none of these things are present, a drop of fluorescin or mercurochrome 220 may reveal a greenish area, a corneal erosion, which will usually heal under a mild collyrium, and needs only to be watched for possible infection. Cases of gonorrheal ophthalmia are usually perfectly evident by the profuse discharge and swelling of the lids, but a daily careful inspection of the cornea should not be omitted, as it may reveal corneal involvement which demands more vigorous treatment. In any of these cases while a diagnosis may usually be made without a general anesthetic, this must sometimes be given before the eye can be treated, and even for careful examination in the case of a perforating wound, where a struggle would be dangerous.

In the second class of cases, the child is brought in with a watery or purulent discharge from his eye, usually without much evidence of pain. Examination is here much easier, and the diagnosis resolves itself usually into one of four conditions.

Pink-eye, or acute conjunctivitis, is usually easy to diagnose by the history of an acute onset with or without evident contagion, the profuse purulent secretion, and the small petechial hemorrhages of the conjunctiva. If there is doubt, pneumococci should be looked for in the smear.

Blepharitis shows only slight discharge or conjunctival congestion, but the characteristic scales are present about the roots of the lashes, and small pustules are often seen.

Any long continued watery discharge should arouse the suspicion of congenital stenosis of the lacrymal duct, which is fairly common. If there is swelling and redness over the lacrymal sac, and pus appears in the conjunctival sac on pressure over the swelling, the diagnosis is plain. If the discharge is chronic, however, and other things can be ruled out, stenosis of the duct is probably present, and can usually be diagnosed and cured in one treatment under a general anesthetic. The upper lacrymal punctum is dilated, and boracic solution is injected with a fine dropper. If it fails to come through into the nose, but returns by the lower punctum, the upper canaliculus should be slit up and one probing with a No. 10 Bowman's probe will often effect a permanent cure.

The other condition, which often causes a mildly irritated, discharging eye, is follicular conjunctivitis. This seldom occurs before school age, and the small round lymphoid nodules in the lower folds are characteristic. It should seldom be mistaken for trachoma, which also occurs in children and should be looked for in any family in which the parents have trachoma, as it is often present with absolutely no subjective symptoms.

The third type of case, the child whose vision is apparently poor, but who shows no inflammatory symptoms, presents a more difficult problem, since here the trouble is inside the eye. First in this class may be placed congenital amblyopia, which simply means poor sight. In infants this is only suspected where the eyes show aimless wandering movements, and cannot be made to fix any object. Later these movements usually change to a nystagmus, or regular twitching of the eyes laterally when fixation is attempted. In the presence of this sign a careful examination is necessary, and will often reveal other signs of mental deficiency. A careful refraction, however, by retinoscopy, if the child is under ten, may show a high refractive error, and vision may be improved considerably. If there is evidence of poor vision in an older child, without nystagmus, correction of high myopia or astigmatism may bring the vision up to normal.

The two other important causes of poor vision are congenital cataract and glioma retinae. The distinction between these two conditions by the general practitioner is often difficult, but most important, often involving the life of the child.

Every year we see one or more children with glioma whose parents have been told that it had cataract and that there was no danger in waiting. The symptom of both conditions is an opaque reflex behind the pupil. Late cases of glioma show increase of tension, congestion, and distension or even rupture of the globe, but early cases, the only ones which can be saved, often show nothing but this opaque reflex. In glioma, however, this reflex is yellowish or reddish-yellow, vessels may be seen passing across it, and it is located behind the lens, that is, at a distinct distance behind the iris. In cataract the reflex is greyish or white, and is usually close behind the pupil. If the pupils are widely dilated by atropine or homatropine, these differences should be made out. In any case of doubt, or in any case, since it is usually best for a child's future to operate on cataracts early, a specialist's opinion should be insisted on. Glioma retinae is probably the most malignant disease known, since when it has once extended outside the globe, it is fatal in almost all cases. An illustration of this malignancy is a case seen last year, a baby two years old. He was brought in because one eye did not appear to fix, and a very early glioma of one eye was seen with the ophthalmoscope. The other eye was examined under ether, and was normal. Radium was applied in the socket after enucleation, and since sections of the nerve showed no evidence of extension, a fairly good prognosis was given. A little over a year later, however, we heard from the child's home in Montana that it had developed glioma in the other eye, which was enucleated. The child died later from cerebral involvement. This is an unusual case, however, and usually such an early enucleation would be successful. I have followed a number of cases that have survived the danger age after an enucleation.

The last type of case is the child who squints. While children never die of squint, certainly the human race is no more distinguished in appearance by their having survived. And since they will survive, it is worth while that as many as possible shall be enabled to look the world in the face with both eyes at the same time. In a great many cases this can be done by early attention to the condition, but by this is meant very early attention. There is one class of cases, congenital paresis of the external rectus, of which this is not true. This is an interesting condition, probably due to some injury in labor, and as it is in the majority of cases left-sided, probably has some relation to the ordinary L. O. A. position. It is distinguished from the common type of squint by the fact that the squinting eye cannot be turned out past the mid-line. Aside from this, and from the rare paresis of ocular muscles from other causes, nearly all the cases of squint in children are the ordinary concomitant convergent or divergent strabismus, and these are nearly all due to errors, small or large, in refraction. If these errors could all be corrected at the very outset of the squint, before the fusion faculty has been lost, or the squinting eye become amblyopic from disuse, I believe the vast majority of these cases would be cured without operation. When the squint has persisted any length of time, this is much more difficult, and often impossible. About half of the parents of squint cases that we see have been told that the squint would pass off in time or that nothing would be lost by waiting till the child is older, and so I wish to emphasize the great importance of early correction in these cases. It is not necessary that a child be old enough to give reliable answers, or even have his vision tested. In the smallest infants a refraction can be made with the ophthalmoscope under general anesthetic, and when a child is old enough to sit up and look at a bright object, retinoscopy can usually give a valuable refraction. I have even refracted a six months old baby, who fortunately had no teeth, by placing one finger of the hand that held the lenses in the baby's mouth which caused him to fix steadily while a very satisfactory retinoscopy was done. It is not only on account of their squint that these infants should wear glasses all the time, but to develop visual acuity in the defective eye, which often loses, otherwise, practically all useful sight through failure to develop. Operations later may correct the squint, but can never restore sight to an amblyopic eye. Refraction on squinting infants and children should, of course, always be made under a complete cycloplegic, so that as much as possible of the refractive error may be corrected, and glasses should be worn constantly.

To sum up, when we see a child with a painful inflamed eye, we should examine it carefully, looking especially for four things: —a wound, a foreign body, a corneal ulcer, or interstitial keratitis. In the watery, discharging eye without much pain, we look for four things:—blepharitis, acute conjunctivitis, lacrymal stenosis, and follicular conjunctivitis. In the eye with poor vision we think also of four important things: Amblyopia, high refractive error, cataract, and glioma. In squint cases we will look for refractive error and correct it as accurately as possible, at the earliest possible age.

THE TREATMENT OF ACUTE SINUSITIS.

George B. Potter, M. D., Omaha, Nebraska.

The prevalence of sinusitis complicating influenza renders the question of treatment a very important subject for consideration. This is especially true in view of the fact that so many of the cases seen by the rhinologist have already become more or less chronic. A certain percentage of cases may recover without treatment, but there seems to be a very large percentage of these which, if allowed to go untreated during the acute stage, advance insidiously into a stage of chronicity from which they are relieved only by prolonged and painstaking treatment. Early treatment directed to the maintainance of the natural drainage openings of these important accessories of the upper respiratory system is the key note of success in the management of sinusitis complicating influenza. A rather simple method of treatment for this class of cases is available.

A review of the usual symptoms and physical findings would seem to be appropriate as leading up to the indications for treatment. Given the history of an attack of influenza, with its acute prostrating symptoms, followed by an apparent improvement for a few days, but with the persistence of a regional headache, often supra-orbital, which is not relieved by the ordinary headache remedies, stuffiness of the nose with or without discharge, impaired resonance of the voice, dryness and pain in the throat, sometimes a distressing cough, weakness and dizziness upon exertion; all or part of which symptoms persist with variable periods of improvement and remission, and you have the picture of the average case of sinusitis complicating influenza.

Some of the cases present only a part of the symptoms enumerated; others have all of them. All ages and classes of society are attacked. The condition is often overlooked in the case of children or else diagnosed as an ordinary cold. Many adults are difficult to convince that they have anything more serious than a cold in the head. Some cases give a history of comparative comfort during the early part of the day followed by headache and depression in the afternoon. This is the result of interference with drainage. This is the time to be on the alert for it is at just this stage of the disease that local treatment usually succeeds in shortening its course. Neglect in the treatment now results in prolonged exposure of the entire respiratory tract to the infection contained in the drainage into the nose and naso-pharnyx. The patient is often more or less incapacitated for work and becomes depressed.

The ordinary treatment for rhinitis is not attended with improvement in the condition, and the case is finally referred to a rhinologist. It is quite a common thing for the patient to present a note from the attending physician saying, “Can you find the cause for this headache?” or “Can you do anything for this cough?” Examination of the nose reveals turgescent turbinates on one or both sides. Sometimes only the middle turbinates are swollen. The inferior turbinates may be partially covered on the mesial surface with a muco-purulent discharge. The discharge may be streaked with blood. At times pus may be found between the middle turbinate and the septum. At other times there is no discharge found in the nose. Examination of the throat may show the dry glistening mucous membrane of the posterior pharyngeal wall covered with a thick, tenacious, purulent secretion. This discharge may be found well up in the naso-pharnyx. The mucous membrane of the pharnyx may be hyperemic, with a number of enlarged lymph nodes seen behind the posterior pillars with no discharge present. The tongue is usually coated. Temperature ranges from 98 to 102 degrees. Transillumination and X ray are not necessary in every case. They may even be confusing where there is a history of previous sinus trouble. Where available they should be employed, but the diagnosis may be fairly definitely made from the physical findings.

The symptoms and physical findings indicate more extensive pathology than is found in the ordinary case of rhinitis. It seems to be quite generally conceded that the infection of the sinuses takes place by direct extension through the natural ostia connecting the sinuses with the nose. Those communicating with the maxillary, frontal and anterior ethmoid sinuses are situated between the middle turbinate and the lateral wall. Those communicating with the sphenoid sinuses are situated posterior to the middle turbinate well up in the posterior wall of the naso-pharnyx. The mucous membrane of the nose is continuous with that of the sinuses through these openings. Tumefaction of the vascular tissue covering the turbinates and the hiatus may result in partial or complete closure of the ostia leading to the frontal and maxillary sinuses with consequent interference with drainage and resulting pain. Sinuses communicating with the middle fossa are more frequently involved in this class of acute cases. Sphenoid involvement is comparatively more rare and when present requires surgical measures, so that a discussion of their treatment is not considered to be within the scope of this paper.

The presence of the foregoing symptoms and physical findings are usually sufficient to warrant the diagnosis of sinusitus. Supraorbital headache may indicate frontal, maxillary or ethmoid involvement. Headache radiating from frontal to occipital region more often points to the sphenoid. It is not always possible to determine in every case whether there is involvement of a single sinus or more before instituting treatment. A careful inspection of the ostia of the different sinuses will usually confirm the diagnosis as to which sinus or sinuses are implicated. Good illumination is essential to a clear view of the field under examination and a careful study of the pathology.

A conservative effort directed to the reestablishment of drainage through the general sinus openings is the treatment of choice as the primary treatment in this class of cases. Many of these acute involvements of the sinuses will yield to a properly directed local treatment; and it is by no means true that all of these cases require surgical interference. In some instances in which local treatment of a conservative nature fails, due to a deep seated pathology, the result as a rule of recurrent attacks of sinusitis, surgical measures must be employed. It is true, however, that methods requiring a minimum amount of rhinological technic meet with gratifying results in quite a large number of these cases. The technic as generally accepted by rhinologists is as follows:

A flexible probe is securely tipped with a small wisp of absorbent cotton. This should not be more than three millimeters in diameter as a larger swab is more apt to traumatize the mucous membrane and produce bleeding. The slender swab may be inserted more easily and with much less pain. It should be curved at the end so as to pass lateral to the middle turbinate when the shaft is held along the mesial border of the lower turbinate. This swab is saturated with 5% solution of cocain to which may be added a few drops of adrenalin. It is slowly and gently inserted along the upper border of the lower turbinate and is passed back to the anterior edge of the middle turbinate. After a wait of a few seconds it is rotated ninety degrees outward so as to pass in a downward direction between the middle turbinate and the lateral wall when it will usually be felt to continue without resistance for a distance of from two to three centimeters into the hiatus. It is allowed to remain in this position for from five to ten seconds. This is repeated on the opposite side of the nose if there is evidence of involvement of both sides. Marked shrinking of the middle turbinate quickly follows. The appearance of the nasal passage now presents quite a different picture. Where before there was a mere slit between the turbinates and septum there is now a distinct widening of this space which allows sufficient room for visualization of pathology and ample working space.

If the case is seen in the office, gentle suction is applied with a Sorensen suction tip. Any of the ordinary suction methods may be used. The main point is the reduction of the obstructive swelling before proceeding with an attempt at evacuation. If seen at the home, irrigation may be employed using a pint of normal salt solution by gravity method with an elevation of the pressure head to fifteen inches with the patient's head bent well forward on the chest to avoid forcing the fluid into the Eustachian tubes. This method of irrigation is insisted upon to the exclusion of all sprays and douches of whatever character. The choice of normal salt solution is made because of the belief that it is non-irritating to the highly inflamed mucous membrane. A second cotton tipped probe, saturated with a 25% solution of argyrol, is next placed in the region of the hiatus semilunaris for a few seconds and withdrawn slowly. The astringent action of argyrol used in this manner seems to have a more lasting effect on the swollen mucous membrane. Whether or not any of the argyrol enters the sinus is a mooted question but the fact remains that after the first treatment there is usually much less difficulty with each succeeding attempt to enter the middle meatus. After a wait of about one minute the patient is allowed to blow the nose. Careful instruction is given never to use undue force in blowing the nose if the nostril is not comparatively free at this time. If the case is of the purulent type, a variable quantity of pus is evacuated quite easily.

Following this stage of the treatment there is frequently immediate relief from the distressing supra-orbital headache which may have persisted up to this time. An oil spray completes the treatment.

This treatment is repeated daily or on alternate days, depending on the severity of the case until all of the acute symptoms subside. Usually upon inspecting the nose the second day there is a decided lessening of the amount of turgescense in the turbinates with a marked decrease in amount of discharge. The symptoms may return within a few hours or not until the following day. A recurrence of the symptoms is an indication that the drainage has been interfered with and the treatment is repeated. There is, as a rule, a gradual reduction in the symptoms within a few days. Careful instructions are given as to the use of the saline solution at home daily in addition to the treatment given in the office. In cases where the patient is confined to bed, ice packs over the frontal region are used at the beginning of the treatment. This aids quite materially in reducing the swelling during the early stage. The general care of the patient is carefully outlined. Convalesence is usually quite prompt and continuous following this method in properly selected cases. It is essential to continue daily cleansing of the sinus until several days have elapsed without any signs of discharge. Recurrence of symptoms will follow in cases not kept under observation for a sufficient length of time with this or any other method.

The treatment is applicable to children as well as adults. It is not applicable to cases in which there is a marked deviation of the septum or hypertrophy of the turbinates.

ACUTE GASTRITIS.

M. L. Wilson, M. D. Falls City, Nebr.

By acute gastritis we mean a suddenly occurring inflammation of the gastric mucosa.

Etiology. The most common cause of acute gastritis is errors in diet or method of eating. We live in an age where competition is strong, and travel at a pace incompatible with health. The business man hurries through his meal; only partially masticating his food, and washes it down with large quantities of fluid. Children catch the infection, and hurry through meals in order to reach school or resume play, and this continued rush of American life is productive in a high degree of stomach disorders. The character of food must also be considered; for tainted food, or that in which the fermentative processes are just beginning, acts as an irritant. Overloading of the stomach may be an exciting cause, as well as very hot, or highly seasoned food. In children these fermentative processes are very apt to excit acute catarrh of the bowels as well. Another not infrequent cause is the abuse of "moonshine" whiskey, home brew, alcohol, with the wood left in, and soft drinks containing cayenne pepper, and ginger. The acute gastritis which follows a drinking bout is one of the most typical forms of the disease. The tendency to acute indigestion varies greatly in different individuals, and indeed in families. We recognize this in using the expressions a "delicate stomach", and a "strong stomach." Gouty persons are generally thought to be more disposed to acute dyspepsia than others. Acute catarrh of the stomach occurs at the onset of many of the infectious fevers.

An attack of cholera morbus may be attended by vomiting and retching of so violent a character as to be followed by gastritis. Certain diseases are said to predispose to this lesion; such as rheumatism, syphilis, and tuberculosis. Chemical substances taken by design or accidentally must be considered as irritants.

Pathology. The changes in the gastric mucosa are similar to those of mucous inflammation of other parts. Beaumont's study of the inflammatory condition of the mucosa through a gastric fistula in the person of St. Martin, shows a reddened and swollen condition of the membrane, while an increased secretion of mucus bathes the angry looking membrane. The gastric juice is deficient in hydrochloric acid, though the lactic and butyric acids are in abundance. The mucous and peptic follicles are swollen, and appear granular with infiltration of the intertubular tissue. The submucous tissue may become swollen and edematous, and ulceration may occur. Hemorrhage not infrequently occurs. The pathological changes are in proportion to the severity of the inflammation.

Symptoms. These depend largely upon the character and degree of the inflammation. In the milder forms, the local symptoms predominate, and are a marked feature in all forms.

In the milder form the symptoms are those of acute indigestion, the patient complaining of an uneasy sensation in the epigastric region; or there may be a burning sensation, or a dull pain with nausea and sometimes vomiting. There is distention of the stomach, attended by eructations of gas, which give temporary relief. The tongue is coated, the breath sometimes offensive, and the patient complains of a bitter taste in the mouth. When food and drinks are taken, the pain is aggravated.

In the severer forms, the above symptoms are increased and chilly sensations precede the fever, which is quite active for a few days, the temperature reaching 102 to 103. The pulse is rapid and hard; skin dry; bowels constipated; urine scanty and highly colored, with deposits of urates. The vomiting is more persistent, and consists of bile, mucus, and undigested food.

Where gastritis is the result of swallowing mineral acids, alkalies, arsenic, corrosive sublimate, or tincture of iodine, resulting in toxic gastritis, the inflammation is intense, the pain severe, and vomiting and retching persistent. The burning sensation is felt in the throat and the esophagus as well, and thirst is almost intolerable, the gratification of which increases the vomiting. The pulse is feeble though rapid, the extremities become cold; the surface clammy; the face pinched and anxious, the fore-runner of collapse. The position is dorsal. The breathing is shallow, with the legs flexed to relieve the tension, the abdomen is tumid, and tenderness is marked; and finally in fatal cases, coma comes on; the breathing is shorter, and death ends the suffering of the unfortunate patient.

Diagnosis. In the milder forms, where there is no fever, the diagnosis is readily made by the local symptoms, but where the disease commences with a chill followed by more or less fever, and there is no previous history of gastric derangement, the disease is readily mistaken for one of the infectious fevers. Some of these resemble closely an acute infection. The symptoms may be very intense, and if, as sometimes happens, the attack sets in with a severe headache and delirium, the case may be mistaken for meningitis. With the abdominal pains intense the attack may be confounded with gallstone colic. It is a very common error to class under gastric fever the mild forms of the various infections. The gastric crises in locomotor ataxia have, in many instances, been confounded with a simple acute gastritis, and it is always wise during the examination of adults to test the knee jerks and pupillary reactions.

Where gastritis follows the taking of corrosive salts, mineral acids, or drugs of any character, the diagnosis is readily made by the history of the case, and the attendant symptoms.

Prognosis. In the milder cases, commonly known as acute dyspepsia, recovery takes place in from twenty-four to forty-eight hours, while those of a febrile type may persist for several days, and if followed by indiscretion in eating, the frequent recurrent attacks result in chronic gastritis. Where poisons have been taken, the case is more serious and may terminate in death.

Treatment. Mild cases recover spontaneously in twenty-four hours, and require no treatment other than a dose of castor oil in children, or calomel and castor oil in adults. In the severer forms, if there is much distress in the region of the stomach, vomiting should be promoted by warm water, or the stomach tube may be employed for some patients. If there is eructation of acid fluid, bicarbonate of soda and bismuth may be given. The stomach should have, if possible, absolute rest, and it is a good plan in the case of strong persons to cut off all food for a day or two. The patient may be allowed soda water and ice freely. It is well not to attempt to check the vomiting unless it is excessive and protracted.

In the treatment of toxic gastritis, when poisoning by acids occurs, magnesia should be administered in milk or with egg albumin. When strong alkalies have been taken, the dilute acids should be administered. If the case is seen early, lavage should be used. For the severe inflammation which follows the swallowing of the stronger poisons, palliative treatment is alone available, and morphine may be freely employed to allay pain.

POSTGRADUATE WORK IN DISEASES OF CHILDREN IN ENGLAND AND ON THE CONTINENT.*

Floyd S. Clarke, M. D., Omaha, Neb.

The first impression one receives of England is not all it should be, because of the unattractive city of Liverpool where most American travelers land. The streets are narrow and winding, the stores and shops lack the smartness of London, and there are few places of interest. It is strictly a seaport and commercial city of approximately three quarters of a million inhabitants.

The children are admirably looked after by Dr. Fordyce, a Glasgow man. Apparently he is the only man who is practicing pediatrics exclusively in the city. There is one combined children's and orthopedic hospital. It is well managed and conducted. In the children's department Dr. Fordyce and his associates are doing modern scientific pediatric work.

The trip from Liverpool to Edinburgh is through a portion of England and then through the renowned hills and dales of Scotland. The Scotch can well be proud of this beautiful city. The main street, Princess Street, extends from the Caledonian Railway station to the North British station. On one side of this famous street are modern shops and stores, and on the other a vast hill surmounted by an old castle with its spacious grounds, its towers and turrets, and old guns and cannon. The contrast between the old and the modern in Scotland is at once striking.

In Edinburgh lives Dr. John Thompson. What Jacobi was to pediatrics in America, Dr. Thompson is in England and Scotland. He is very much revered and looked up to, and one hears him quoted very often. He has a vast fund of information at his fingers ends. At his home he showed me a great number of lantern slides of all sorts of out of the usual conditions occurring in children. He believes that pictures present the best method of impressing clinical phenomena and for this reason has gotten together this remarkable collection. He has rather recently published an admirable book which is replete with plates from this group of pictures. Of late years he has given particular attention to defective and backward children, and his clinic at the Royal Hospital for Sick Children is most interesting.

The medical wards at the hospital are divided between Dr. H. McNeil and Dr. J. S. Fowler, both very capable men. In Edinburgh one is at once struck with the great number of cases of tubercular peritonitis. Of course, the cause of this is the lack of proper dairy and milk supervision in Scotland. In commenting upon this with Dr. McNeil, I found that he and others are endeavoring to bring about more rigid regulation of the dairying industry. In passing, it is interesting to note that Dr. Fowler is joint collaborator of the book on Diseases of Children of which Garrod, Batten and Thursfield are the editors. Especially to be commended is Dr. Fowler's article on Nephritis and Diseases of the Genito-Urinary Organs in this book.

The University of Edinburgh is a magnificent institution, affording unusual thoroughness in undergraduate teaching. The young Scotch physician is to be congratulated on the attention paid to his preliminary training. There is, however, no apparent arrangement made for postgraduate instruction. The Scotch physician has long been noted for his keenness, studiousness, and thoroughness. The visiting physician is impressed with the possibilities of postgraduate instruction in Scotland.

---

*This brief resume was not intended to be a description of the teachings of the different men, but rather as a sort of guide, should other physicians desire to go abroad for pediatric study.

It is the substance of a talk given at the monthly meeting of the St. Joseph's hospital staff.

In London postgraduate teaching is rapidly becoming a definite fact. An organization has been perfected with headquarters at the Royal College of Physicians at No. 1 Wimpole St. Here the secretary assists the visitor in securing what he wants. By obtaining a ticket to the Fellowship of Medicine and Postgraduate Medical Association, access is given to the greater portion of London hospitals and clinics. Bulletins and daily schedules of operations and demonstrations are posted every morning at No. 1 Wimpole St. A monthly bulletin showing the regular routine work of each hospital and the special work for the month is mailed to your address.

Pediatric work in London centers around the Hospital for Sick Children in Great Ormond St. There is a vast amount of clinical material coming to this hospital every day. My own impression would be that there are more children coming here daily for medical advice than any other place in the world. The wards of the hospital are always full. Of the attending physicians to the hospital and dispensary one might mention Dr. Still, Dr. Robert Hutchinson, Dr. Thursfield, Dr. Poynton, Dr. Frew and Dr. Donald Patterson. Dr. Nabarro presides over the laboratory and with his associates is doing some excellent work in the treatment of congenital syphilis, the results of which will be published. Bedside clinics and dispensary teaching are conducted each day by one or more members of the staff. Dr. Still also holds clinics at King's College Hospital. He is extremely practical and an excellent children's clinician. At present he is revising his book "Common Disorders and Diseases of Children." In the dispensary at Great Ormond St., Dr. Frew and Dr. Donald Patterson give many valuable points. One's whole time could be spent here profitably.

Dr. Jewsberry conducts ward walks and a nutrition clinic at St. Thomas'. Dr. Smith has a clinic for the treatment of congenital syphilis.

At Guy's Hospital Dr. Cameron conducts clinics and ward walks. On visiting Guy's the excellent collection of wax models must not be missed. Here is gathered together a truly remarkable number of models in wax, of all sorts of clinical and pathological conditions occurring in both children and adults. Several hours could be spent here very profitably.

At Paddington Green Hospital for Children, Dr. G. A. Sutherland had in his ward some very interesting clinical material.

At the National Hospital for the Paralyzed and Epileptic, there are many cases of nervous conditions occurring both in children and adults. Clinical talks are held nearly every afternoon. They are well attended by physicians from all over the world.

In summing up the children's work in London, it may be said that English physicians are first of all clinicians. They seem to have a storehouse of knowledge and clinical experience which is very serviceable at the bedside. They are disinclined to accept new and untried methods. Comparatively few laboratory examinations are done. The nutrition and feeding clinics are not numerous. Nevertheless they are to be commended for their ability as clinicians, and the faculty which they seem to possess to an unusual degree of being able to bring to the bedside their experience and results of their previous observation.

The Mecca for postgraduate instruction abroad has for a long time been Vienna. The English describe the instruction in Vienna as being "spoon-fed." Classes of one or more can be arranged for, and individual teaching can be gotten on almost any subject the student may desire. Living is very cheap in Vienna, much less expensive than any city we visited. It is possible for one person to live very well for from $60 to $75 per month, and this sum would include the remuneration paid his instructors for teaching.

A considerable portion of the teaching is given in the English language. In some branches all the work can be obtained in English. Approximately two-thirds of the instruction in pediatrics is given in German, and I would advise anyone who contemplates a trip to Vienna or Berlin for postgraduate work in children's diseases to first familiarize himself with the German language. Von Pirquet speaks excellent English. At present he is very enthusiastic about his new system of nutrition. No doubt it has a place in institutional work, or where it is desired to bring large groups of children up to nutritional standards. It is questionable whether it will ever become popular in specific instances with the individual pediatrist. Von Pirquet has established a home in the country near Vienna where a number of children are being treated for inactive tuberculosis, mostly of the pulmonary type. They are fed according to his methods with apparent success. Their little bodies are extremely browned from constant exposure to air and sun. It is indeed interesting work.

Probably the most oustanding figure in Vienna from a pediatrist's standpoint is Dr. B. Shick. Of course, every one knows of him because of his work in diphtheria. He is a bachelor, and his whole life is spent in the Kinderspital or Children's Hospital. His thought is almost entirely along scientific and experimental pediatrics. He speaks rather broken English, but is able to convey his ideas clearly. He has a most likable personality.

Every Saturday Dr. Carl Liner conducts a skin clinic exclusively for children. It is well attended and numerous cases from a dermatological standpoint are discussed.

Instruction in pathology can be obtained from Dr. Erdheim. The gross specimens are studied. Dr. Erdheim is a master in his particular branch and discloses many interesting pathological facts which, so far as I know, do not appear in the literature. At present he is handicapped for lack of funds. To illustrate: For want of proper refrigeration specimens are being used in various stages of decay. Classes were held in the early morning, and unless the student had augmented his physical well being with a proper breakfast he might be prevented from obtaining any mental stimulation because of the extreme odor. Another instance of economy which is necessary, is that Dr. Erdheim wears cotton gloves in his demonstrations instead of rubber ones.

Among others who are devoting their lives to the children of Austria and from whom excellent instruction can be gotten are Dr. Knoepfelmacher, Dr. Kassowitz, Dr. Wagner and Dr. Lehndorf. Dr. Fritz Eisler has a particularly unique way of interpreting X ray plates. The Austrians are a very kindly people. They are courteous, and every consideration is given the American visitor.

CASE REPORT.*

Miles J. Breuer, M. A., M. D., F. A. C. P., Lincoln, Nebr.

The following is a report of ten cases of pulmonary tuberculosis, carried through to arrest and to a condition of efficiency for work and enjoyment without any medicine, except an occasional dose to meet an incidental symptom. The writer notes with satisfaction that the medical profession is getting away from the idea that the treatment of tuberculosis requires some specific drug, or specific method of treatment; and this report is presented to give a further impetus to that idea.

The cases will not be taken up individually; an analysis will be presented, including etiological factors, diagnostic methods, pathology, therapeutic methods, and results. The observations cover a period of three years. The patients include four men and six women. The ages run from 17 to 33; two cases were under 20; two were over 30, and the other six between 20 and 30. In 8 cases there was a clear family history of tuberculosis; in two cases it was clearly negative. Four of the patients had lived all their lives on a farm; one was an active business man; two are women with families, and two are students in school; one was a mechanic employed in a round-house, in the presence of large quantities of smoke and unpleasant gases.

The inciting factor was studied. In four of the cases, it seemed to be a debilitating infection; in four cases actual physical overwork, and in two cases, mental and nervous strain, worry and financial trouble. The modern view is that the tuberculous infection exists in a latent form in these cases, and that the inciting factor lowers the resistance and offers an opportunity for the tuberculous infection to get well established.

In four of the cases, the presenting symptom, the thing which brought the patient to a physician, consisted of severe gastro-intestinal symptoms, simulating gastric ulcer, appendicitis, or colitis. In two cases, the patients came complaining of weakness, loss of weight, malaise and inefficiency. In the remaining four cases, the presenting symptoms were reflex aphonia, amenorrhea, furunculosis and pain in the right arm.

---

*Read before the Lancaster County Medical Society, March 17, 1923.

The diagnostic methods used corresponded quite closely to those used by the army draft examining boards in 1918. The history and physical examination were given the greatest importance. Both can be divided into groups of signs and symptoms. The toxic group consists of rise of temperature, loss of weight, malaise, anorexia, etc., the reflex group, of spasms and atrophies of skin and muscle innervated from the same segments as are the lungs, and of functional disorders of viscera innervated from these segments (examples: patient emaciated about the shoulder girdle, but fairly well nourished elsewhere; gastro-intestinal symptoms, tachycardia, the local symptoms of physical signs of consolidation, restricted expansion, exudation, and lung tissue destruction). All cases were checked up by stereoroentgenograms. Only one case had tubercle bacilli demonstrable in the sputum. (One of the reasons for our present lowered death rate from tuberculosis, is the fact that cases are being diagnosed and treated before they begin to discharge tubercle bacilli). No case was included in this series that did not have clear and definite signs and symptoms in all of the three groups, and unequivocal confirmation from the roentgenologist. Every case was carefully studied to rule out all other possible conditions.

In seven of the cases the pathology was distributed fairly well over both lungs; always the oldest lesions in the right apex. In three of the cases, including both of those below 20 years of age, the lesion was confined to the upper third of the right lung. There were no advanced cases with lung tissue destruction and cavity formation. The lesions were infiltration or swelling, surrounding areas of small, discrete, disseminated tubercles, wheat-grain size or smaller, with only an occasional spot the size of a pea or a dime; and healed and fibrosed areas.

The treatment is simple to state, but was difficult to carry out. It consisted of forced nutrition, and removal of excess strain on the system. It takes very little to constitute an excess load for a tuberculous patient; and it varies with the patient. The details of the diet will not be gone into here. Care was taken to select proteins of quantity and character fitted to build up tissue and resistance. The vitamin question was considered, but not permitted to assume undue importance. The food was distributed over small meals, frequently eaten. Definite standards per 24 hours were set for the patients.

In regard to the excess load, foci of infection were searched for. From one case, infected tonsils were removed. In all cases the gastro-intestinal tract was kept clear, but without drastic purging. Rest in bed was enforced. Two of the patients were compelled to give up their occupations completely; the rest were allowed to continue them partially. Psychotherapy was made use of in teaching them to take their lives, work, and worries in a relaxed, unperturbed manner; and also to eat, in spite of their anorexia.

The incidental symptoms for which occasional doses of medicine had to be used, were constipation, anorexia, headache, and epigastric pain. Ordinary conventional remedies were used, and none given over a longer period than a few days. Counter-irritation was used to relieve the pain in the right arm, previously mentioned.

When the treatment was begun, each patient was given his instructions, and told to return in a week. Five of the patients had gained from one to four pounds at the end of the first week, and stated that they "felt better." At the end of two weeks, eight of the patients showed increase in weight, amelioration of symptoms, and improvement in general condition. In two of the patients, four weeks of effort were required before any improvement was noted. In no case was the progress steady; there were occasional halts and even retrogressions, in spite of all effort.

The three youngest patients, 17, 18, and 21 years old, showed the most rapid gain. They reached their standard weight for height and age (according to American insurance tables) in about four months, at which time they were also free from symptoms. The average time for the ten cases in reaching approximately standard weight was 9 months. One patient, a mechanic, aged 33, with severe gastro-intestinal symptoms of 15 years' duration, required 20 months to reach standard weight, and his symptoms persisted till the very end. The pain in the right arm also occasionally appears, although that patient has been up to standard weight for 18 months.

The rest of the patients are free from symptoms, and have a feeling of well being that they did not have before treatment was begun; they are efficient in their work, and enjoy life.

A CASE OF EXCEPTIONALLY RAPID RECOVERY FOLLOWING REMOVAL OF A SPINAL CORD TUMOR.*

J. Jay Keegan, A. M., M. D., Omaha, Neb.

Spinal cord tumors offer one of the most favorable fields for neurological surgery on account of their greater operability from the standpoint of localization and facility of removal. Early and accurate diagnosis can be made before irreparable damage is done to the spinal cord by pressure, and accurate localization permits laminectomy in a small field with very little danger of complications.

The following case of spinal cord tumor was from the medical service of Dr. Rodney W. Bliss and is reported on account of the early diagnosis and the remarkably rapid recovery following operation. The patient was completely paralyzed below the level of the second dorsal cord segment and two weeks after the operation walked from the hospital with practically no evidence of motor impairment. The case also is noteworthy from the fact that it was complicated by pregnancy of four months duration which was not interrupted by the operation.

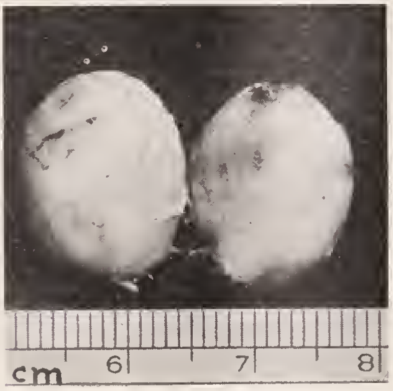


Fig. 1. Spinal cord tumor cut open and showing the convex surface of both halves.

HISTORY.

The patient, a Swedish woman, 31 years of age, entered the hospital January 10th, 1922, complaining of soreness and stiffness in the lower extremities and numbness of the feet.

The soreness and stiffness of the knees was first noticed about six months previously. A physician was called, who suspected focal infection and had the tonsils and several teeth removed. No relief was obtained from this and the soreness and stiffness extended into the thighs. These symptoms continued about the same until Christmas, 1921, when she caught "cold" and the soreness in the thighs became worse. She then noticed that the feet became numb when she lay down and that there was some swelling of the feet after standing.

In addition to these symptoms which pertained to the cord lesion she complained of amenorrhoea since September 18th, 1921, with a feeling of fullness and oppression in the abdomen in the evening. Four years ago she had some gastric disturbance in the form of belching, soreness and fullness in the upper abdomen, associated with interscapular pain. This was diagnosed gallstones by her family physician. Since that time she has been constipated.

The patient has been married 9 years, her husband is living and well, she has had two previous pregnancies, both children living and well, the youngest four years old.

EXAMINATION.

The patient entered the hospital in a wheel chair, a healthy appearing, rather obese Swedish woman in no apparent distress except difficulty in walking. She had a definitely spastic gait requiring assistance and a marked Romberg sign. She was unable to void urine for a few days after entrance, requiring catheterization.

The head, eyes, nose, mouth, ears and neck were negative except evidence of removal of tonsils. The heart and lungs were normal. The abdomen was prominent from the thick panniculus and the enlarged uterus. Vaginal examination confirmed the diagnosis of four months pregnancy.

The lower extremities showed the spastic gait noted on entrance, with positive Babinski plantar extension and ankle clonus. The patellar and achilles reflexes were exaggerated. Tactile sense was indefinite below the knees. Pain sense was lessened over the same area. The upper extremities were negative.

The temperature, pulse and respirations were normal, urine negative, blood cells negative, blood and spinal fluid Wassermann reaction negative. The spinal fluid was clear, colorless and had a cell count of 10. There was slightly increased pressure.

PROGRESS.

Jan. 13th—Complained of severe cramps in both legs, more in right than in left. also complained of a band sensation around abdomen. A marked ataxia and muscular inability of the right leg was noted.

Jan. 16th—Patient finds it more difficult to walk than previously. She also has difficulty in voiding urine.

---

*From the Department of Surgery (Neurological)), University of Nebraska College of Medicine, Omaha.

Jan. 23rd—Patient has gradually been becoming more helpless, the spasticity remaining in the lower extremities. The area of hypo-sensitivity appeared to be rising. There was normal sensation above the level of the second thoracic cord segment.

Jan. 26th—A definite upper limit of sensory loss has developed at the level of the second thoracic segment of nerve distribution. Spinal cord tumor was diagnosed and laminectomy advised. Patient was unable to move right foot or knee and had only slight movement of toes of left foot.

Jan. 29th—Complete paralysis of lower extremities, retention of urine.

OPERATION.

Jan. 30th—Laminectomy was performed under ether anaesthesia through a midline incision over the spines of the fifth, sixth and seventh cervical and the first three thoracic vertebrae. The muscles were separated from the spines and laminae, hemorrhage controlled by hot packs. The spines and laminae of the 6th and 7th cervical and the first thoracic vertebrae were removed exposing the dura. A firm nodule could be felt beneath the dura. The dura was incised exposing a small oval firm white tumor on the left dorsolateral surface of the cord. The tumor was not adherent to the dura, but deeply indented the nervous tissue, appearing embedded in its substance. It was easily removed by gentle traction on the overlying membranes and dissection without disturbing the cord. Hemorrhage was quickly stopped by moist cotton pledgets and one fine silk suture near a dorsal root. The dura was closed with a continuous silk suture, the muscle and aponeurosis with three layers of interrupted chromic catgut sutures.

POST-OPERATIVE COURSE.

Jan. 31—On the first day post-operative patient was able to move both feet, which was not possible before operation. She was unable to void urine.

Feb. 4th—There has been rapid progress in recovery of muscle power in the lower extremities. Patient was able to help herself considerably, moving in bed. Voided urine.

Feb. 7th—Skin sutures were removed, wound in good condition. Knee jerks normal and strength in legs apparently returned. The sense of position at the knees and the ankles has recovered but there is still some uncertainty of position of the great toe of both feet. Patient walked with aid.

Feb. 8th—Walked without aid.

Feb. 9th—Pins and needles sensation still noted in toes when lying down. Romberg sign persists.

Feb. 13—Patient discharged today, 14 days after operation, walking from hospital without detectable ataxia. Sensory tests showed loss of light touch over all toes of right foot and great toe of left foot and decreased sensibility over same area. Thermal tests were confused over both feet and lower two-thirds of both legs. Sense of position of right great toe was impaired, left normal. Knee and achilles reflexes normal, ankle clonus negative. Babinski negative, Romberg still slightly positive. The temperature, pulse and respirations have been normal since the third day post-operative. Patient has left foetal movements since operation.

Pathological examination of the tumor showed it to be an endothelioma. There is very little likelihood of recurrence of this type of tumor when completely removed. It measured 10x12x16 millimeters. (Fig. 1).

September, 1922—Patient has been delivered of a normal baby since operation and has regained completely all sensory and motor impairment.

THE SAN FRANCISCO SESSION

American Medical Scenic Special

A special train has been arranged for to leave Chicago over the Burlington Railroad at 11 p. m., June 20. Stops will be made at Aurora, Mendota, Galesburg, Burlington, Ottumwa, Creston, Council Bluffs, Omaha, Lincoln, Denver, Colorado Springs, Glenwood Springs and Salt Lake City. This train will arrive at Omaha at 3:50 p. m., and at Lincoln about 5:30 p. m., June 21; at Denver at 7:30 a. m., June 22, where a short stop will be made, and at Colorado Springs at 10:30 a. m., June 22. A stop-over of approximately twenty-four hours will be made at Colorado Springs to permit sight-seeing trips to the Garden of the Gods, Pike's Peak and other places of interest. Sleeping cars will be placed conveniently, while at Colorado Springs, to meet the convenience of the party. Leaving Colorado Springs at 4 a. m., June 23, opportunity will be had to see the Royal Gorge and the Canyon of the Arkansas in daylight. About five hours will be spent in Salt Lake City, June 24. From Salt Lake City, the train will proceed over the Western Pacific Railway, known as the Feather River Canyon route, which offers some of the most interesting sights between Chicago and the Coast. San Francisco will be reached at 5:30 p. m., June 25. This special train will be made up of the finest Pullman equipment, with dining car and observation car. More specific information can be secured by addressing J. R. Van Dyke, General Agent, Passenger Department, C. B. & Q. Railroad, 179 West Jackson Boulevard, Chicago.

Clothing for California Comfort

We are receiving a number of inquiries regarding the climate and character of clothing to be worn at the time of the meeting of the American Medical Association here the last week in June. At this time of the year it is likely that there will be a certain amount of wind, some fog, and the evenings will be quite chilly. Rain is not expected at this time of year, and the days will be pleasant and delightful.

Persons coming to the annual meeting should bring overcoats and evening wraps; furs are worn by San Francisco ladies in the evening at this time of year. In the southern part of the state and the central valleys the climate will be very much warmer, corresponding somewhat to the summer climate in the Eastern states. In the mountain districts and the mountain resorts the climate will more nearly approach that of San Francisco. Persons who expect to travel much in this state will be more comfortable with the ordinary weights of underclothing and with overcoats and wraps to meet the varying climates in different parts of the state.

W. E. Musgrave,
Chairman, Local Committee of Arrangements.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor, Madison, Neb.
R. B. Adams, M. D.,
Associate Editor, Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.

F. A. Long, Chairman Madison
W. O. Bridges Omaha
B. F. Bailey Lincoln
R. B. Adams, Ex officio Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. VIII May, 1923 No. 5

Annual Meeting, Lincoln, May 15-17

CHANGE IN HOURS OF MEETING.

Your attention is called to a different plan of holding the sessions of the next meeting. The general sessions will be called to order at 8:30 A. M. on Tuesday and Wednesday, and at 9:00 A. M. on Thursday. The afternoon sessions will start at 2:00 P. M. on Tuesday and Wednesday, and at 1:30 P. M. on Thursday. The House of Delegates will meet at 1:00 P. M. on Tuesday and Wednesday, and at 8:00 A. M. on Thursday. This has been done with the idea of conserving time and it is hoped that the convention will be improved by it.

DISCUSSION OF PAPERS.

In looking over the program you will notice that no time is allowed for discussion, following the reading of each paper. Due to a very full program the Committee found this necessary. However, at the end of each session one-half hour will be allowed for the discussion of the papers, and each reader will be expected to be present during this period. In this way more papers can be read and less time lost than if our old system had been continued.

BRING THE LINE UP TO THE FLAG.

The closing paragraph of the article entitled "The Medical Practitioner and the American Society for the Control of Cancer" which appears elsewhere in this issue, coming as it does from a member of the medical profession who has a broad view of medical practice over the entire country, strikes a note which it might be well to heed at this time.

The paragraph in question reads: "Our medical ethics instituted at the time of Hippocrates admit of no change; but our interpretation of them may be broadened to meet the changing conditions; especially those which have been brought about during the past two or three decades. It may be necessary to change our ideas regarding proper non-personal publicity for the medical profession as a whole and for our state and county societies."

Consider for a moment the type of medical item which the public gets through the press. Examples can be found in any issue of the Journal of the American Medical Association, in the department of Tonics and Sedatives, where they appear as jokes. The sad part, however, is that the lay person who reads this drivel, published as so called ethical advertising, by a member of the profession whose ethics are, to say the least, somewhat elastic, does not see the joke but takes the matter as a serious proposition. We do not doubt for a moment that the oil stock promoter chuckles as he writes and sends out his wonderfully attractive offer of financial gain by way of his oil stock, lease or what not, to a doctor on his sucker list. The doctor does not chuckle after he finds the results of his speculation. Some of the doctors in Nebraska may know the truth of this statement from personal experience. The point is that the lay public knows no more about proper medical practice and what medicine and surgery can and cannot do than the doctor knows about oil wells. Consequently, having had the scare head items dished up to him by the so called regular medical man, he sees no difference when he reads the advertisement of one of the members of the many cults. The layman gives to each equal importance which, to be sure, is what each deserves.

This type of advertising will probably always continue and unless some effort is made to counteract it will achieve results as it is achieving them now. This is particularly true as during the past few decades we have gradually drifted into an era of propaganda and advertising due to the easy and quick dissemination of news through modern methods of communication and publication. Advertising has become the mainstay of modern life—whether it be that of educational, social or commercial activity. The grade of success is measured in great part by the ability of the press agent. Even the life and growth of a city is determined in some measure by the activities of the publicity department of its Chamber of Commerce. No organization of public or community life exists without a publicity committee and this committee, more than any other, is always on the job. The medical profession alone, seems to feel that its benefits are so great that the public will seek them out. A large number of people, it is true do, but it is equally true that possibly a larger number either seek advice and treatment from the newest fad advertised in the papers or go to doctor this or that who has, according to the papers, invented some new cure-all or done some wonderful wholly unknown or hitherto unattempted operation which proves successful until it fails and then drops out of the papers and the treatment is lost sight of. Its exponents have gathered their harvest and their path is marked only by the gravestones of their victims.

Education of the laity, as to what is and what is not real in medical practice, is the apparently feasible answer to the question of the suppression of this form of activity. This means that the medical profession must put before the public the facts and truths of medical practice. The old atmosphere of mysticism must be broken down and the public brought to realize that the greater part of medical and surgical therapeusis rests upon a foundation of scientific fact and before any individual is fitted to care for the ills and ailments of mankind that individual must have attained the requisite knowledge. Further, that this knowledge is obtained in only one way and that by long and hard work. It cannot be obtained in a short time and it is neither inherited nor God given by prayer.

The method by which this can be done best is through the newspapers and magazines which reach the people and which furthermore they read. This brings the profession up against the commercial problem, for the newspapers are not philanthropic organizations. Thus far the idea of medical men has been to disguise propaganda under the form of news, so it will not have to be paid for. As a result any meeting of medical men receives scant mention while that of a meeting of one of the cults is spread over the front pages. The reason is that the paper realizes that one does not pay—the other does.

Publicity campaigns have been carried on successfully in departments of medicine. The tuberculosis campaign, for example. But—This was financed by lay organizations. The general medical profession contributed little. It is as true in this as in any other human activity that if one waits for gifts he will have a long wait and when they come they will be small and grudgingly given. Should the medical profession of Nebraska, through the State Association, decide to inaugurate a campaign of education, several things must be considered. First. The attempt must not be a spasmodic one but must be continuous and hammered at day in and day out. Second. To attain this end it is not sufficient to have the medical men do it because they do not know how. It must be done by a full time paid publicity agent, who knows how to get the material before the public, and the material can be supplied by the individual members of the Associaton through a Publicity Committee which will have general oversight of material and method. Third. The approximate cost of such a campaign will be from ten to fifteen dollars per year for each member of the State Association. Less than the membership in a Chamber of Commerce.

There is an opportunity for the profession of the State of Nebraska to lead the way in an advance in medical procedure which is surely coming. The State Association meets this month. Is it worth while to try? If it is, it should be discussed at the meeting.

STIFF SHOULDER.

By far too little attention is paid to soft tissue injuries about the shoulder joint.

It is well known that only slight degrees of injury are necessary to bring about what often proves to be a serious and persistent disability. This is because the shoulder joint in man is not well adapted anatomically to the uses to which it is put. The upper limb has been dispensed with as a means of bodily support in locomotion but it was never designed to hang dependent from the shoulder joint with constant tension on the joint capsule, ligaments and muscles. The joint form declares its weight bearing origin.

Neither was it structurally developed to permit abduction of the arm to the horizontal or perpendicular from the erect position. This is one of the latest muscular functions to be acquired by the joint and so likewise, it is unstable, easily lost and regained with great difficulty in cases of disease or injury.

This is because in effecting elevation of the hand to the position above the head nature was not prodigal in muscle expenditure. Further, by plotting the lines and character of the pull of the deltoid it is made evident that this muscle is a lever of the third order. Such a lever insures velocity of movement but not strength. All these facts determine the disability often met with following shoulder joint injuries.

In man the joint possesses great range of motion and is movable in all directions. There are no osseous blocks to the various movements. Extremes of motion are checked only by ligamentous and tendinous tension. On the occasion of an injury the muscle balance is upset and the arm is carried beyond volitional control and past normal range of mobility. Either fracture, dislocation, or soft tissue injury occurs. If it be the latter it may be any one of three or four well defined and diagnosable entities. But often in such injury so many structures are involved that it is impossible to identify any one especially or to label the condition as more than a "sprain."

Such an injury is usually dressed in the conventional position with a sling or a Velpeau bandage, but always in complete adduction and the patient is told to "rest" the shoulder. This position is the exact antithesis of rest.

The patient returns in a few days or weeks with the shoulder very tender, the arm hugged tightly to the chest wall, and the elbow supported on the iliac crest to take tension off the dependent arm and stretched or fibrosed soft parts. The shoulder is elevated, often rising and falling with the tilting of the pelvic support when the patient walks. There is little or no active abduction and vigorous opposition to passive abduction.

If such an injury be dressed in the abducted position tension will be taken off the joint structures. The arm will be supported in the horizontal plane and true physiologic rest will be obtained. Above all, the movement most often lost, i. e., abduction, will be conserved to the maximum.

Most shoulder joint injuries are not bed confining. If they happen to be so, abduction can be maintained by tying the wrist to the head of the bed. If they are ambulatory they should be dressed in a plaster of Paris abduction splint or metal abduction splint. The latter is preferable because it permits inspection and slight mobility so that the progress can be anticipated. Either dressing is very comfortable and the patient does not object.

If the condition is a chronic one with firm and unalterable periarticular adhesions the arm should be forcibly abducted under anesthesia and permitted to ankylose in abduction. On removal of the splint it will fall to the chest wall and abduction, as well as fair degrees of other movements, can be carried out by rotation of the scapula on the chest wall. Of course, it is always necessary to have preliminarily determined the active mobility of the scapula in chronic cases. Naturally the indications for physiotherapeutic measures in both acute and chronic cases remain.

I do not believe it is always possible nor often necessary to interpret the symptoms in shoulder joint injuries on the basis of isolated bursal inflammation or tendinous or periosteal tears. Occasionally they exist and demand individualized treatment. Most often the writer has seen the type described by Brown.

Most important, in my opinion, is the early recognition and application of a fundamental in the treatment which is dressing the arm in abduction.

This is established on phylogenetic, physiologic, and clinical bases.

—J. W. Duncan.

INSULIN.

About one year ago Drs. Banting and Best, working in the laboratories of the University of Toronto, succeeded in isolating from the pancreas of a five month calf fetus a product capable of reducing the percentage of blood sugar in diabetic animals. Announcement of this discovery had long been looked forward to, for a pancreatic internal secretion having some relation to carbohydrate metabolism was shown by a number of observers, even before the researches of Von Mehring and Minkowski established the relationship between pancreatic function and experimental diabetes.

Much work has been done since that time in attempting to isolate this internal secretion, but it remained for Banting and Best to make a soluble salt extract of the internal secretory cells, after the external secretory cells had been digested away. Zulzer in 1908 attempted the same work, but the toxic reactions following his injections compelled him to abandon it. Banting and Best found that the toxic reactions were less marked in the extract obtained from the pancreas of the embryo up to five months of fetal life, as it was found that in a calf the islands of Langerhans were fairly well developed and external secretory cells few in number. With the aid of Kalk they found the extract was soluble in alcohol up to seventy per cent and this solubility in alcohol separates the protein, which is the cause of the severe reactions.

Up to the present time our treatment of diabetes has been mainly dietetic; first, an under-nourishing diet brought out by Allen and his co-workers that has been responsible for a marked lessening in the morbidity from this disease, second, a balancing diet, e. g. Woodyatt diet, in which the ketogenic and anti-ketogenic substances are balanced. With both methods, however, we have been using what Woodyatt describes as "dietetic crutches."

In insulin we have a substance which when injected into the circulation causes marked reduction of the blood sugar and causes the disappearance of both sugar and ketone bodies from the urine. These effects depend upon an improved utilization of carbohydrate in the body, as is shown by observing the respiratory quotient. The clinical symptoms of diabetes and the general condition of the patient also show a marked improvement.

As to the clinical use of the product, it is believed by Banting, Best and McLeod that it will probably never replace careful dietetic regulation. Banting recently stated that if a patient can be given four hundred calories of the basal metabolic requirement he did not believe the case severe enough to use insulin. He believes that eighty per cent of the cases can still be well treated dietetically. Drs. Gamble and Fletcher have investigated at Toronto the use of insulin in diabetes with infection and with infectious diseases, with good results. Cases of gangrene have been improved. In two cases of pulmonary tuberculosis complicated with diabetes, in which it was impossible to give the high caloric diet necessary for the treatment of tuberculosis, the difficulty was overcome by the use of insulin, and definite progress made. They have had experience with the use of insulin in eight major surgical cases in diabetics, with good results.

At the present time they advise giving insulin hypodermically in doses of five to six units per 10 grams of sugar in the urine, twice daily. It is their hope that later the substance may be prepared in such a way as to be given by mouth.

Woodyatt thinks that, apart from any immediate effect that the use of insulin may have upon the treatment of diabetes, it will also add significantly to our knowledge of metabolism and the general problem of endocrine physiology.

Preparations for the manufacture of insulin under the control of the University of Toronto have been carefully made; and every precaution has been taken to prevent the exploiting, by the unscrupulous, of this epoch making discovery.

—Frank M. Conlin.

DUES.

A number of county societies as yet have either not sent in their dues or have a few members who have not done so. The time until the convention is short and anyone delinquent at that time will not be entitled to attend. So see to it that your dues are paid at once, and keep yourself in good standing.

THE NEXT MEETING.

In another part of this Journal you will find the plan of the program for the next meeting. This Scientific Program contains more papers than any for several years, and the writer believes that there is an abundance of splendid subjects. The entertainment planned is also the best that could be obtained. All in all this meeting will repay every one who attends it. Make up your mind to be present during the entire time, and let nothing prevent you from coming.

Request for Case Reports. A further study of hydatidiform mole has been undertaken at this hospital especially in regard to the frequency of malignancy following this condition. An attempt is being made to collect case reports from outside physicians. Cases reported by physicians will be greatly appreciated and the physician will be given due credit in any literature published.

Address communications to Robert B. Kennedy, M. D., Chicago Lying-in-Hospital, Chicago, Ill.

NEBRASKA STATE MEDICAL ASSOCIATION. SCIENTIFIC PROGRAM.

55th Annual Meeting at Lincoln, May 15-17, 1923.

Tuesday, May 15th, 8:30 A. M.

Opening Exercises—

Call to order by President B. F. Bailey.
Invocation, Rev. Walter Aitken.
Address of Welcome, Mr. August Eiche.
Response, Dr. H. E. Potter, Fairbury.

1. The Symptom Cystitis, A. D. Munger, M. D., Lincoln.
2. Management of Acute Sinus Infection, J. C. Tucker. M. D., Beatrice.
3. Some Problems in Caring for the Insane, D. G. Griffiths, M. D., Lincoln.
4. Injurious Effect of Improper Light Upon the Eyes, L. B. Bushman, M. D., Omaha.
5. The Prevention and Cure of Pneumonia, F. A. Wells, M. D., Axtell.
6. A Rational Treatment of Pneumonia, F. A. McGrew, M. D., Hastings.
7. Primary Synovial Tuberculosis of the Knee Joint, W. E. Wolcott, M. D.. Omaha.

Tuesday, May 15th, 2:00 P. M.

1. Dysmenorrhoea and its Surgical Treatment, D. L. Davis, M. D., Omaha.
2. The Point of Contact, Robert McConaughey, M. D., York.
3. Focal Infection of Dental Origin and Principles Governing its Removal, W. L. Shearer, M. D., Omaha.
4. Gastrointestinal Diseases of Children, P. L. Gillespie, M. D., Beatrice.
5. Intussusception in Children with Report of Cases. H. B. Hamilton, M. D., Omaha.
6. The Relation of Upper Respiratory Infection to Chronic Disease of the Chest, J. C. Thompson, M. D., Lincoln
7. Transfusion of Blood for Hemorrhage and Shock, George L. Pinney, M. D., Hastings.
8. Problems of Epilepsy, H. A. Wigton, M. D., Omaha.

Wednesday, May 16th, 8:30 A. M.

1. Local Anesthesia, J. M. Willis. M. D., McCook.
2. Tumors of the Breast, B. B. Davis, M. D., Omaha.
3. Insulin in the Treatment of Diabetes, LeRoy Crummer, M. D., Omaha.
4. Primary Mumps Infection of the Lachrymal Ducts, A. E. Wade, M. D., Lexington.
5. Syphilis and Syphilis-like Affections of the Mouth, A. Schalek, M. D., Omaha.
6. Alkalies as an Adjunct in Septic Surgical Cases, L. E. Penner, M. D.. Beatrice.
7. Cardiac Irregularities, A. L. Smith, M. D.. Lincoln.
8. The Nature and Treatment of Interstitial Goiter, A. E. Hertzler, M. D. Kansas City, Mo.

Wednesday, May 16th, 2:00 P. M.

1. Oration on Medicine, E. L. Bridges, M. D., Omaha.
2. Certain Practical Points Concerning the Diagnosis and Treatment of Heart Disease, J. B. Herrick, M. D.. Chicago, Ill.
3. Fractures of the Femur, J. E. M. Thomsen, M. D., Lincoln.
4. Gastric Ulcer, Frank Conlin, M. D., Omaha.
5. Fifteen Cases of Perforating Gastric Ulcer, A. C. Stokes, M. D., Omaha.
6. Focal Infection in Neuropsychiatry, G. Alex. Young, M. D., Omaha.
7. Methods of Treatment of Empyemas of the Antrum of Highmore, A. G. Lueschen, M. D., Columbus.

Thursday, May 17th, 9:00 A. M.

1. Hemorrhage in the New Born, Floyd S. Clarke, M. D., Omaha.
2. The Goiter Problem, J. C. Waddell, M. D., and W. A. Rush, M. D., Beatrice.
3. Appendicitis or What? J. M. Mayhew, M. D., Lincoln.
4. The Present Status of the Treatment of Diabetes Mellitus. A. D. Dunn, M. D., Omaha.
5. The Transverse Incision in the Surgery of the Kidney, J. E. Summers, M. D., Omaha.
6. The Doctor's Relatives, Lucien Stark, M. D., Hartington.
7. Oration on Surgery, C. A. Roeder, M. D., Omaha.

Thursday, May 17th, 1:30 P. M.

1. Some Undesirable Effects of Deep X Ray Therapy, Carl Kail, M. D., Lincoln.
2. Pernicious Anemia. Robert Kerr, M. D., Alma.
3. A Criticism of Certain Criticisms Directed Against Paranasal Sinus Surgery, W. P. Wherry, M. D., Omaha.
4. Obscure Cases of Tuberculosis, Miles J. Breuer, M. D., Lincoln.
5. Broncho-Pleural Fistula, Chester H. Waters, M. D., Omaha.

6. Recent Advances in Neurological Surgery, J. Jay Keegan, M. D., Omaha.
7. Indications for Caesarian Section, George P. Shidler, M. D., York.
8. The Treatment of Epidemic Encephalitis, F. W. Heagey, M. D., Omaha.

IMPORTANT NOTICE TO MEMBERS.

A reduction of one and one-half fare for the round-trip on the "Certificate Plan" will apply for members (also dependent members of their families) attending the meeting of The Nebraska State Medical Ass'n to be held at Lincoln, Nebr. The arrangement will apply from the following territory:

Nebraska and from Julesburg, Colo.

The following directions are submitted:

1. Tickets at the normal one-way tariff fare for the going journey may be bought on any of the following dates, (but not on any other date), May 11-17, 1923, inclusive.

2. Be sure when purchasing your going ticket to ask the ticket agent for a certificate. Do not make the mistake of asking for a receipt. If, however, it is impossible to get a certificate from the local ticket agent, a receipt will be satisfactory and should be secured when ticket is purchased. See that the ticket reads to the point where the convention is to be held and no other. See that your certificate is stamped with the same date as your ticket. Sign your name to the certificate or receipt in ink. Show this to the ticket agent.

3. Call at the railroad station for ticket and certificate at least 30 minutes before departure of train.

4. Certificates are not kept at all stations. Ask your home station whether you can procure certificates and through tickets to the place of meeting. If not, buy a local ticket to nearest point where a certificate and through ticket to place of meeting can be bought.

5. Immediately on your arrival at the meeting, present your certificate to the endorsing officer, Dr. R. B. Adams, as the reduced fare for the return journey will not apply unless you are properly identified as provided for by the certificate.

6. No refund of fare will be made on account of failure to either obtain a proper certificate, or on account of failure to have the certificate validated.

7. It must be understood that the reduction for the return journey is not guaranteed, but is contingent on an attendance of not less than 250 members of the organization and dependent members of their families at the meeting holding regularly issued certificates from ticket agents at starting points showing payment of normal one-way tariff fare of not less than 67 cents on the going trip.

8. If the necessary minimum of 250 regularly issued certificates are presented to the Joint Agent, and your certificate is validated, you will be entitled to a return ticket via the same route as the going journey at one-half of the normal one-way tariff fare from place of meeting to point at which your certificate was issued up to and including May 21, 1923.

9. Return tickets issued at the reduced fare will not be good on any limited train on which such reduced fare transportation is not honored.

AMERICAN PROCTOLOGIC SOCIETY.

The 24th annual meeting of the American Proctologic Society will be held at Los Angeles, Calif., on June 22 and 23, 1923. The meeting place is the Hotel Alexandria, and the profession is cordially invited to attend the public sessions.

COUNTY SECRETARIES CONFERENCE.

A conference of county secretaries will be held in connection with the annual meeting of the State Association at Lincoln, on Tuesday, May 15th at 5:00 P. M. President B. F. Bailey will address the conference, and short snappy talks will be given by several secretaries. A dinner will be served at 6:45.

THE SAN FRANCISCO SESSION

Post Convention Tour to Hawaii

In connection with the telegraphic invitation extended by Hon. Wallace R. Farrington, governor of Hawaii, as published in The Journal, March 10, the following comprehensive tour has been arranged.

Leaving San Francisco, night of June 29, the party will sail from Los Angeles, June 30. on the Calawaii. Visit to live volcano at Kilauea. Automobile drives round Honolulu and the island of Oahu. Reception by Governor Farrington. Visits to Kalihi leper receiving station and hospitals. Returning, arrive at Los Angeles, July 21. Total inclusive cost from Los Angeles back to Los Angeles, $415. Reservations and booklets may be obtained from Fred. J. Halton, 714 Marquette Building, Chicago, former Secretary, Hawaii Tourist Bureau, who will personally escort the party to Hawaii.

Special Trains to San Francisco

Michigan Golf Special.—Dr. W. T. Dodge, president, and Dr. F. C. Warnshuis, secretary. of the Michigan State Medical Society, have made tentative arrangements for a special train to the San Francisco Session. This train will be made up of compartment sleepers, diners, club car and observation car, and will have a barber, valet and maid. Leaving Chicago at 8 p. m., June 17, the Michigan Golf Special will arrive at San Francisco on Saturday morning, June 23. Each day stops will be made at places where golf courses are to be found. An opportunity will be afforded for playing eighteen-hole matches. Reservations have already been made at these golf courses, and very complete arrangements have been perfected for the convenience of the passengers on this train. Members of the Association are invited to join this party and to bring their wives and other members of their families. The cost will be $235. This will include a round trip ticket, half a compartment going, meals en route, taxi and automobile charges, green fees, caddy fees and other incidentals. The party will disband at San Francisco, and the return trip may be made over one of several optional routes. The Pullman fare returning will be extra. The cost of this trip is only $55 greater than the regular round trip fare. The party will be limited. Requests for reservations from states adjacent to

Michigan may be sent to Dr. F. C. Warnshuis, Powers Theater Building, Grand Rapids, Mich.

THE SOCIETIES.

The Madison County Medical Society met at Norfolk on April 10th. Papers were read by Dr. C. C. Barr, Tilden; Dr. Frank Jensen, Newman Grove and Dr. E. L. Brush, Norfolk.

The quarterly meeting of the Platte County Medical Society was held in Columbus on March 12th. The local dentists were invited to attend and the program was given by Drs. A. D. Davis and W. L. Shearer of Omaha.

HOSPITAL NOTES.

The W. C. T. U. of Kearney, for several years interested in the hospital problem, has purchased a modern 22-room residence and will occupy it for hospital purposes.

The Alverdale hospital at Sutherland is announced. It is the enterprise of two ladies, one a registered nurse.

The new hospital at St. Joseph's Home for the Aged, West Point, has been completed. It is equipped with 18 rooms.

NOTES ABOUT THE DOCTOR.

Dr. L. W. Rork, of Oxford, is moving to Hastings.

Dr. D. W. Vanderhoof, formerly of Omaha, has moved to Scribner.

Dr. G. L. Roe, of Beatrice, has returned from a visit to Quincy, Ill.

Dr. S. A. Campbell, Norfolk, has resumed his work after a long illness.

Dr. Karl Connell, Omaha, was presented with the D. S. M., at Fort Omaha, in April.

Word has been received from Dr. F. A. Long at Los Angeles that he is steadily improving.

Dr. and Mrs. F. J. Rosenberg, Lexington, recently celebrated their fiftieth wedding anniversary.

Dr. Nelson Mercer, formerly of Omaha, arrived from Londodn, England, in March for a two months' visit.

Dr. and Mrs. C. C. Gafford, of Wymore, have returned from South America, where they spent the winter.

Dr. Von Schulte of Creighton College of Medicine, was elected president of the Nebraska Academy of Science.

Dr. and Mrs. F. S. Owen, of Omaha, have sailed for the Orient, where they will remain for six months.

Dr. B. S. Kelley, of Creighton, Neb., spent the month of April in St. Louis taking postgraduate work in pediatrics.

The office of Dr. L. L. Noble, Holmesville, was broken into recently and a quantity of morphine and cocaine stolen.

Dr. E. A. Sommers. Ashland, will move to Lincoln the middle part of May. He has sold his office and home to Dr. C. L. Davidson of Hoskins.

Dr. Miles J. Breuer, of Lincoln, who recently recovered from a severe illness, is in Philadelphia taking postgraduate work at the University of Pennsylvania. He was made a fellow of the American College of Physicians at the Congress on Internal Medicine in April.

The following Nebraska physicians attended the American College of Physicians meeting in Philadelphia, April 2nd to 6th inclusive: Drs. Frank Conlin, LeRoy Crummer, Adolph Sachs, George Pratt, H. M. McClanahan, E. C. Henry, C. A. Roeder and J. R. Blackman, of Omaha; and Drs. J. M. Mayhew and Miles J. Breuer, of Lincoln.

NECROLOGICAL.

Dr. Henry S. Summers, a graduate of Western Reserve Univ. School of Medicine in 1882, for forty-one years, with a short intermission, a conscientious practicing physician at West Point. at one time superintendent of the Norfolk State Hospital, died at West Point on April 10th of cerebral hemorrhage, aged 67. He was a charter member and sometime president of the Elkhorn Valley Medical Society. As a citizen he always took a keen interest in the civic affairs of the community.

Dr. C. N. Meriwether, Campbell, a graduate of Central University of Kentucky in 1906, die on February 25th, aged 40.

Dr. F. Wilcox, Hubbell, died on Febr. 13th, aged 61.

Through the courtesy of Dr. A. B. Fellers of Palisade we have been informed of the death of Dr. F. H. Bostock, Palisade's centenarian doctor. Dr. Bostock was born in England in 1820; graduated from a medical college in Hamilton, Canada; and served as a surgeon in the Civil War in the 65th Ill. Volunteers. He died March 17th at the age of 102.

DR. F. H. BOSTOCK, 1820-1923

We are also indebted to Dr. Fellers for the accompanying picture, which was taken shortly after Dr. Bostock's 100th birthday.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol VIII. Norfolk, Nebraska, June, 1923. No. 6

CONTENTS

Page

The Responsibility of the Medical Profession to Civilization, Benj. F. Bailey, M. D. 185

Medical Economics, Professor Edward H. Gardner, of the School of Commerce, University of Wisconsin, Madison, Wis. 192

A Study of the Present Day Economic Problems in Medicine—An Essential, C. A. Roeder, M. D., 197

The Cult Menace, E. L. Bridges, M. D., 201

The Insulin Treatment of Diabetes, LeRoy Crummer, M. D., 205

Management of Acute Brain Injuries, G. E. Neuhaus, M. D., 207

Thymus Disease in Children With Report of Case, H. E. Flansburg, M. D., 211

Malnutrition in Children of Pre-School Age, W. O. Colburn, M. D., 213

EDITORIALS—

The Lincoln Meeting 216

Profiteering in Medicine 216

The Relation of The Doctor to The Public 217

University of Nebraska Postgraduate Course 219

The Societies 219

Notes About The Doctor 219

Necrological 219

The Medical Student, John W. Shuman, M. D., F. A. C. P., Professor of Internal Medicine, A. U. B. Beirut, Syria 220

THE RESPONSIBILITY OF THE MEDICAL PROFESSION TO CIVILIZATION.*

Benj. F. Bailey, M. D., Lincoln, Nebr.

We are citizens of the world first and physicians afterwards; as physicians we have a duty to ourselves and a greater one to our country and to the world.

With this definitely in mind, it is my wish today to review the past, and in the light of history consider the present, and forecast what may be a probable future. One can only predict a probable trend of events, but in this prediction the past forecasts the future.

Charlemagne found the "white man's world reduced to Scandinavia, Germany west of the Elbe, the British Isles, the low countries of northern France and Italy, with a few in southern France and Spain. This was the lowest ebb for the Nordics." "West of this line the feudal states of medieval Europe developed into Western Christendom, the nucleus of the civilized world of today."

It was an old time struggle of the Roman and Byzantine empires, to prevent being overcome by the Asiatics, the Mongols and Mongoloids. Time and time again they usurped the territory and drove back the Nordics.

"Four times since the fall of Rome Asia has conquered to the very confines of Northern Europe." Defeat is sometimes an unsuspected victory, and that the Nordics were driven to the very coasts, doubtless explains the maritime development of the Nordic people which made for colonization, and the development of a power which made the white peoples present day possible; but the struggle is not over, and "bolshevism in Russia means the elimination of the Nordic aristocracy and the dominance of the half Asiatic Slavic peasantry," for Russia was never deeply Nordicised.

---

*President's address before the Nebraska State Medical Association, Lincoln, Nebr., May 16, 1923.

The future of the white people of the world depends upon their virility and numerical and intellectual development as compared with the development of the Asiatic tainted people. The world war with sequent events is bringing this question boldly to the front.

Today, more than ever, we need an unselfish statesmanship. Those who have a thorough appreciation of the lessons of history. The struggle is not over, the blood of the Nordic must not be diluted by the blood of the alien Asiatic. He must not trust his ideals where a conception of such ideals is impossible. The white race must remember its racial responsibility and not let an altruism run wild or an internationalism of sentiment and not of reason dominate its policies. Madison Grant recently said, "This is suicide pure and simple and the first victim will be the white man himself."

Stoddard of Harvard states, "We are confusedly aware of our evil plight and legion are the remedies proposed. But one element should be fundamental to all the compoundings of the social pharmacopea. That element is Blood." With this statement of premises let us study our possibilities for good, for bad, for progression, for regression. Taking advantage of the lessons of the experiences of the past rather than to pass through the shadows of racial suffering and death. "Dame Experience sets a dear school but fools will have no other." May those of the past who had to have their experience save us from being too greatly fooled in this generation. We must give up any desire for an Asiatic domination or protectorate. We must be firm in adherence to the Monroe Doctrine and the development of a white man's country.

The world has been very close to the rocks; it is now little but a floating wreck, lacking, we fear, a sufficient number who read, to compass aright or realize that if they delve into the history of the Nordic race since its appearance three or four thousand years ago, they need not sail on an uncharted sea. We look upon our era as one of the highest civilization. We recognize "Civilization as the flowering of the human species." We sometimes fail to recognize that civilization in its wealth and its luxury, in its individualism as opposed to racial duties, brings its dangers, its weakening influences and its burdens. Civilizations have come and civilizations have gone—disappeared because they were unable to bear their own burdens.

We rest under two dangers, the one the danger of a growing racial degeneracy due to too much comfort, too much leisure, and a going to sleep of Mother Necessity; the second the dilution of the blood of our splendid western race by "Pacific penetration" and the intermingling and intermarrying of our people, with a people who may have virility but whose germ plasm does not give them the heredity of intellectual possibilities and idealistic conceptions that have been the inheritance of the best of our people. There are many theories for the failure of civilization to continue, immorality, luxury, centralization, irreligion and the theory of the failure, the dying out of a senile stock. But during this twentieth century biology has made clear that the **quality of heredity determines** the civilization of a race. The brilliant civilization of Athens, small in numbers but splendid in quality, was dominant. True, the Athenians were not all Platos. There were inferiors as well as superiors, but here as in all civilizations when the superiors ceased to be born progress ceased to continue, for to the superiors belongs the initiative, the leadership, and this class of leaders depends absolutely upon inheritance. A recent writer has said that the destruction of a civilization depends upon "first—structural overloading; second—biological regression; third—atavistic revolt." Considering the first of these causes let us fix firmly in mind that modern biology positively asserts that heredity and not environment determines ultimate human possibilities. For centuries upon centuries, cranial and brain capacity have not changed, when studied in racial lines. Mental acquirement has not been made possible by brain evolution. Evolution means in the light of modern acceptance, adjustment, not even necessarily progression.

We do not inherit the acquired knowledge, social accomplishments, or achievements of our ancestors. We inherit only the capacity to acquire as he acquired with the increasing possibilities permitted us by the accretion of knowledge, of invention and the opportunities to study and achieve vouchsafed to our own generation. The more the acquirement of a generation the greater the demand upon the individual to rank as an average or superior being of his time. Isn't it possible that a time comes in the life of a race when the demand is so complex and great that but few are able to make the grade, while many who in a former generation belonged to the superior class are relegated to the mediocre? This would mean the beginning of a decline in civilization, the acme having been reached. The Lamarckian theory of the inheritance of acquired characteristics is passe. Practically all biologists agree that acquired characteristics are not inherited and that man's whole development rests upon his brain capacity backed by his persistence and industry. Take our own medical profession, consider the demand made upon the youth of today compared with that made upon the youth who entered the profession fifty years ago. Today no man can cover the whole field and the trend toward the investigation of theories and hypotheses has perchance cultivated to an extent a lack of the decision and ultimate outline of a definite line of curative treatment. This may leave the patient a splendid subject of investigation, but the recipient of mighty little in return. Pardon me if I suggest the thought. Isn't the time coming when to save to the world an efficient medical profession we will have to educate our surgeons and practitioners of medicine along most practical lines, that prompt decisions and actions may be possible while the studies in biology and the laboratory are made by men whose lifetime may be spent in the work of assembling for the use of our profession proven facts, not theories—testing everything, fearing nothing, seeking the truth each in his own niche? Thus at least our profession may be saved a "structural decline."

The race whose development is so general that the demands upon its capacity are beyond that capacity must eventually suffer and decline from "structural overloading."

Specialization more distinctly outlined, the development of human reference files, each supreme in his own may be a possible saviour from overloading. "Biological regression," the study of racial differences, shows mankind to be markedly differentiated and from the more gifted races have sprung civilizations. The Greek, Theognis, said, "We look for rams and asses and stallions of good stock, and one believes that good will come from good; yet a good man minds not to wed the evil daughter of an evil sire—, marvel not that the stock of our folk is tarnished, for the good is mingling with the base."

Plato said, "The best should mate with the best and the worst with the worst." Aristotle encouraged the increase of the superior strain; on the other hand John Stuart Mill said, "The attributing of diversities of conduct and character to inherent and natural differences is vulgar." Locke and Hume said, "The human mind is a blank sheet, and the brain is a structural mass, lacking inherent organization or tendencies to develop in this way or that." Rousseau strongly supported natural equality. All of these and many others supported the basic theory that environment, not heredity, determines human development. I believe with Gladstone, the grand old man of England, that the Constitution of our United States is "The greatest single document ever penned by man," but nearly every document and state paper penned by man has required the interpretation of an analytic mind. With this the Constitution is clear. Without it, in my opinion, the Constitution has done more to support the theory of environmental determination of possible human progress, has minimized the influence of heredity and has consequently aroused human unrest, class hatred and given a foundation for the arguments of the demagogue more than any words written since Adam left the Garden of Eden. All men are not born equal. They are not even born with equal opportunity. But they are born with equal opportunity in proportion to the physical and mental capacity of their inheritance, and to preserve this equal opportunity is the sacred duty under God of our nation and our people. No nation can ever set aside the laws of the universe and by assertion make inheritance of no import. This is proven by biology, new to us, but in fact, old as the world. Darwin in '59 gave rise to the hypothesis that the possibility of evolution and adjustment rests largely on heredity. Francis Galton in '65 first gave utterance to a positive opinion that "Heredity more than environment is the basic factor in life and the prime lever of human progress."

Biology demonstrates that the germ plasm is more persistent and with more difficulty modified than is the body plasm. It indicates that the sins of the fathers are visited upon the children's children through the body plasm more than through the germ plasm. Popenoe and Johnson say the "germ plasm is so carefully isolated and guarded that it is almost impossible to injure it." Environment modifies body more than mind though the higher biological type is more susceptible to adjustment and less susceptible to environment. Frederick Woods says, "The cells of the brain cease subdivision long before birth. Therefore, we must expect little modification of brain function." Galton demonstrated that the son of a distinguished English judge had about one chance in four of becoming distinguished, while the son of the lower class had one chance in 4000 of the same achievement. Distinguished Americans are discovered by Frederick Woods to be from 500 to 1000 times as much related to other distinguished persons as is the ordinary American, or in short 1% of the U. S. is as likely to produce a superman as is all of the other 99%. But you say, "How about the men who rise from the mediocre?" In almost every case they can be traced back to a good intellectual inheritance, and to take the most prominent example of history, Abraham Lincoln—Hitchcock, Popenoe and Johnson have demonstrated that the Lincoln lineage is one of the best in America and that the Hanks family have maintained a high level of ability in every generation, and Thos. Lincoln and Nancy Hanks were first cousins. Binet's and similar intelligence tests have rapidly increased in use since 1905 and the greatest opportunity for their use that the world has ever seen was when nearly 2,000,000 men had these intelligence tests applied by our army authorities during the great world war. Yoakum and Yerkes say, as regards these army tests, "Never before in the history of civilization was brain as contrasted with brawn so important." And they add, "Great will be our good fortune if the lesson in human engineering which the war has taught is carried over directly and effectively into our civil institutions and activities." An effort like this must be brief enough to avoid detail while it presents facts enough to inspire thought, so I may be pardoned if I summarize results. If the results in the examination of these nearly 2,000,000 men furnish a fair basis of judgment as seems possible of the intelligence quotient of our 100,000,000 people, the mental age of the American people averages about 14 years. 45,000,000, nearly one-half, cannot develop beyond the proper capacity of a 12-year-old child. Only thirteen and one-half millions will ever show a superior intelligence quotient and only four and a half millions can be considered as very superior. In grading, "A" indicates very superior intelligence; "B", superior intelligence; "C", plus, high average intelligence; "C" average intelligence; "C" minus, low average intelligence. Stoddard of Harvard in careful investigations states that "The A and B elements in America are barely reproducing themselves while the other elements are increasing at rates proportionate to their decreasing intelligence capacity. In other words, intelligence is today being steadily bred out of the American population."

In the army test the percentage of inferiority was lowest among the drafts of foreign born men in this proportionate sliding list, England, Holland, Denmark, Scotland, Germany, Sweden, Canada, Belgium, Norway, Austria, Turkey, Greece, Russia, Italy and Poland. The percentage of superiority was the highest in England, Scotland, Holland and Canada. Then rapidly diminished in the other countries named to a very low grade from Italy, Belgium and Poland. McDougal states, "The higher the level of innate capacity the more it may be improved by education." A recent writer says, "It is literally amazing to observe how mankind has for ages been wasting its best efforts in the vain attempt to change existing individuals instead of changing the race by determining which individuals should produce the next generation." In the United States at the most moderate estimate there exist more than 1,000,000 feeble-minded, insane and epileptic of an extreme and easily identified form, and many, many thousands more of such unstable minds and nervous systems as to be an inherent menace. The biologist Humphrey says, "The army of the poorly endowed grows in every civilized land — by its own rapid multiplication; and to this level the human precipitate from every degenerate of civilization eventually settles." If a stock is to reproduce itself in a civilized world about four children should be born to every marriage. Statistics in Europe indicate among the superior elements of the population the birth of two to four children per marriage. Among the medium people four to six, among the inferior six to seven and among the most inferior seven to eight. In America, Davenport states that at present rates of reproduction 1000 Harvard graduates will have only 50 descendants, two centuries hence. 1000 Roumanians, the lower type today in Boston will have 100,000 descendants in the same space of time.

Enough has been said to give apparent proof of the gradual and not very slow deterioration of the people of the races living under so called civilized conditions. Assuming these premises, where do our greatest dangers lie? First—among the men who inherit a superior brilliant intellect, but without the balance of the judicial. Such men are often scintillating, in person, in speech and in literature. History as well as our present day is filled with examples. We have not yet outlived the teaching of Rousseau, of whom Voltaire said, "When I read Rousseau I want to run about in the woods on all fours." His teachings contain some of truth which camouflages many false doctrines and makes them thereby more dangerous. Tolstoi, without doubt, helped lay the foundation for the Russian revolution. The brilliant men and women in literature, art, drama and the stage who make the arousing of passions, and the words of suggestion, the lines of the picture, evolve the education that menaces and deteriorates the youth of today. Brilliant minds that urge that those more sacred things of sex and family life may be of common discussion and bold exposure will make our coming generation in a way a trifle blase. Demagogues of fine address and personal mien lead the masses to an unrest, to class hatred and try to find in the government a parent who may remove all hardships of life and take away the necessity for that individual struggle and effort which makes for human virility and education. As Brissot hated the rights of property and Robespierre hated science until he brought some of the greatest scientists of that day to the guillotine, so present conditions advancing to the ultimate may in our own day repeat history, and a deterioration of our civilization. And so the demagogues and the brilliant artist and the occasional genius of the intellectual class that may attract and lead in his own brilliant and erratic way, has a sensitive instrument upon which to strum in that great body of mediocre, inferior people, who as one writer says, "have an instinctive opposition and discomfort," those who realize their own insufficiency. Their demands might be less and their happiness great, but for the strumming of the sensitive cords which stimulate the ego in man, while it blinds his eyes to the fact that the difference of environment and achievement of a people and of a nation lies in the individual and his inheritance far more than in governmental inequalities. The man he looks upon as his oppressor is his saviour in that he and his class by their intellectual inheritance guide the activities of the world in a way to make it possible for the great mass under ordinary industrial activity to be well clothed, well fed and to enjoy all the blessings of a sane civilization.

I have painted the dark side, but there is a bright side. A possibility of a sane civilization, not without some clouds, for "into each life some rain must fall," but one which shall be without the realization of a future possible decline from the best which I have held up to you as a danger signal at the crossing. Have I painted it too darkly? A recent French communist said, final victory must be achieved "with your knife in your teeth." Think of the events in the world since August 1914, of the Herrin Massacre, of Boston without a police force, of present conditions on the Pacific coast. If an individual has an inalienable right to defend himself, society has a like right. This as to our right which none shall dispute. Shall we have the courage? John R. Mott says that the correct translation is not Faith as the substance of things hoped for, but Faith is the giving of substance to the things hoped for. Is it expected of us? Admiral Baron Kato recently said, "All the peoples of the world are looking to America for light and faith, for the faith that sees clearly and works confidently to bring things to pass." Shall we give to the world the substance of things hoped for? A recent writer said, "Bolshevism is the incarnation of an atavistic past; Biology, the hope of a progressive future."

The scintillating brilliancy of the highbred paranoiac has led the masses and through systematic delusions developed the bolshevic philosophy, false in its premises and dangerous in its possibilities. Government is man made for his own protection and the principles of a republican form of government must be initiated as the result of the will of its people, and the will of its people must be directed through a safe educational program. One that is based upon truth and developed with the ardor, enthusiasm and persistence that imbues the soldier who gives and gives even unto the supreme sacrifice.

Our profession is the only one that can form a constructive leadership in touch with biology, eugenics and science. It is up to us to present to the world through addresses, through the press, through a literature, an information that shall be so interesting, so simple, so convincing and so everywhere present that it must be absorbed by the masses. In fact, a never ceasing effort that our people may realize that it is their duty to make the most of their talents, but that their talents are inherited while environments are only ways and means that they may develop and use according to their capacity. We must teach the world that environment does not honor man, but that man may make honorable any position in life. A Divine will uses natural processes and nature's laws are the boundaries which must guard those processes. For peace among the peoples, for the greatest efficiency, they must be taught and must accept the fact, that inheritance much more than environment marks their work on earth. The more common people of the world must realize that their position is none the less honorable so long as they grow to the full of their capacity. The higher endowed class should not hold a position more honorable in the eyes of God or man, but one of greater responsibility inasmuch as the intelligence quotient is higher. The bolshevic philosophy is struggling to make the mass believe that the government and his environment make his future and that the government should be in the hands of the mediocre while mediocrity with such a philosophy lacks poise and vision. An altruism which shall be helpful in making it possible for every man to make the most of his capacity, but without sentimentality, shall support a government which shall make every man use to the utmost his every talent, and shall make for the only economic philosophy which can bring about a producing, income receiving, self-supporting, self respecting people.

In the last thirty years Alpine and Mediterranean race immigration has increased until it now constitutes 70-75% of the total immigration. It is an intellectually inferior blood and it should be our duty to hold up the hands of the administration that it may continue to control immigration so that at least foreign blood of inferior quality may not dilute by pacific penetration the blood of the American people until the conception of our original ideals is impossible. We must see to it that the pride of parenthood is so stimulated that as a nation we may realize that the race and its children must improve from within and not from without; that the young man shall seek a wife and the young woman shall seek a husband not inferior in intellect or inheritance; that they shall be imbued with the fact that it is a God-given right as well as duty for us to exercise almost as much activity and enthusiasm in impressing the people with the truth of eugenics as does the veterinarian in teaching the stock-raiser how to raise pure strains of pigs and calves. Paupers beget paupers, criminals beget criminals and had I the time, the tracing of the lineage of certain families would leave no question as to this truth. Popenoe and Johnson state, "The problem of eugenics is to make such legal, social and economic adjustments that a larger portion of superior persons will have children than at present; second—that the average number of offspring of superior persons shall be greatest; third—that the most inferior of persons will have no children and fourth—that other inferior persons will have fewer children than now." Whitham, an English biologist says, "We must acquiesce in the principle that the man who has made his five talents into ten shall profit by the skill and energy he has shown; and that the man who has repeatedly failed to use his one talent shall have no further chance of wasting the corporate resources on himself or his descendants." And I may add that the capacity of a nation depends upon the capacity of the individuals that make it and the capacity of the individuals make the capital of a nation, for all production is the result of the initiative of man—and the nation's capital must be conserved.

Habitual paupers, habitual criminals, the insane, the epileptic, the feeble-minded should not have descendants—sentiment and altruism should be encouraged, but it should be inhibited by good judgment and sound common sense. The inferiors, the unstable that we have, should be cared for humanely and with all kindness. We should make the best of the crop that we have, but should not increase the crop. Sterilization is warranted. The checking of a tainted stock will leave a race forever better.

Today through a superior shrewdness of intelligence, a knowledge of contraceptive methods, it is the intellectually higher class that is inhibited, while the lower and feeble-minded classes run riot and multiply like the Canadian thistle. "The quality of the population is the source of their prosperity" and all this leads to the duty of the medical profession to develop the mental tests among our people, to stop attempting to teach a theoretic equality which neither God nor nature ever intended, to realize that today the great problem of our educational world is to prepare the mediocre for a life for which they may be fitted while not holding back those of a superior intellect in an attempt to make the pace of all the same. In brief, the reorganizing of our educational system upon the basis of capacity and inherent demands. The control of immigration not alone through physical, but also through mental racial tests. The spreading of a new philosophy of life—the encouragement of the perpetuation of superior strains, the suppresion of the propagation of the non-self-supporting strains—the united effort to develop, at least in our own profession, the support for public office and the duties of public life of men who shall be constructive leaders, men who have a well rounded, symmetrical inheritance of intellectual ability, probity and a judicial altruism. Can our profession do this? Yes, if the public comes to know that the development of the real wipes out many a theory, that had power of mind over body or manipulation of the body controlled mind and body, nature would have varied those miracles of human discovery, the carrier, the anopheles, and his numerous fellows. Yes! If the public comes to know the secrets of the limits of stimuli, and of psychical uplift. Yes! If we teach the world at large the basic facts of physiologly; of biology; of medicine; and if the world comes to understand that education lends much to us in our power for good and perhaps even more in saving us from the errors born of ignorance. It is the lack of knowledge for which our profession is to no small extent at fault, that permits the public to run after every new theory, every new cult, everything that promises much, without regard to the rational probability of result. I fear we have sometimes tried to teach more in the spirit of contention than illumination, which has prejudiced, not convinced. The nobler men of our profession have been true to the Hippocratic oath. It has been the guiding light of a profession which has lived much in personal sublimation in its work for the welfare of the human race and the study of human life and has accomplished more through this personal sublimation than has any other force in all the centuries since Hippocrates lived.

We must first honor ourselves by honoring each other. We must come together as a united profession determinedly laboring to make the most of that profession. To stand ready to support and help each other. To remember that our burden of responsibility is more outstanding and our honor greater in that the greatest and most loved of all historical characters was called the Great Physician. In his name we must discountenance a spirit of destructive criticism among our members. Remember there can be only two classes. Those that are sincere and giving of their best. They should be supported and be comrades indeed. The other, the class composed of those who are not sincere and who are not giving of their best. Such should be eliminated. There should be no half-way methods in this. Remember that disagreeing in ways and means does not necessarily constitute an insincerity, for in the ultimate your opinion may be better than that of your fellows or that of your fellows may be helpful to you. We require good financial returns to be efficient in our profession. The public owes it to us, but commercialism should not come first. As we respect each other and walk upright before God and man, so shall we be respected. The future of the development of the race, the salvation of our nation and the upholding of the high ideals of our fathers rests more upon our profession than upon any other branch of the body politic. The cultural and eugenic burden of civilization is largely ours. The burden is heavy, but as my mind rolls back over the history of the past and the achievements of the medical profession, as I enumerate to myself the splendid men I know today, I am without doubt; for I know that under the leading of our profession, though through the throes of the unrest of today, civilization will enter a new era.

The medical profession will take on a new strength and America and the Stars and Stripes will stand for the highest development, the justest government, and the highest achievement the world has ever known.

"And this is the pledge we give them, we who accept the debt,—to build our west in the flaming dawn of a sun that shall never set."

MEDICAL ECONOMICS.*

Professor Edward H. Gardner, of the School of Commerce, University of Wisconsin, Madison, Wis.

I have sometimes heard critics of the medical fraternity declare they did not sufficiently employ a knowledge of therapeutics. But what shall be said in the face of the fact that the Nebraska State Medical Association knows how to charm the minds of the audience with music before they submit them to the heavy ordeal of speech-making? I presume we shall have music introduced into the operating room—whether before or after I leave you to judge from your experience tonight.

I read recently in a journal that an enterprising farmer had employed an orchestra to play to his cows in order that they might give down their milk more freely. I sympathize with the cows! I feel very much more like doing something—I am not sure it is speech-making—after listening to that music. I think probably it is very much more like going home than making a speech, in which I sympathize with you all. But I could not help feeling when the Andante from the Fifth Symphony of Beethoven was played so excellently by this University Orchestra, that the human mind at the pinnacle of its achievement, grasping human passion and interpreting it to us, has performed no greater achievement than in the works of the immortal composers, of which that is to me the greatest.

"We need," said Beethoven, "to study only the best; for life is too short to study everything, and we need great art." We need to be lifted to the heights, because life is not a picnic. It is a battle field. We need to summon our courage and we need to have a vision of the task that lies before us when we face the problems of modern society.

I am a teacher in a great University and in a great Department of Economics. It sometimes seems to me as if the great problems which confront American society today are economic problems. We have learned to what extent our political difficulties have their roots in economic problems. We have learned that our problems of government are based upon the economic welfare of the community; and I think that the problems confronting the medical profession are not immune from similar considerations.

I want to speak to you very seriously and very plainly tonight. You will probably learn to beware of the man who is introduced to you as having a message. I want to assure you I am an innocent bystander who was shanghaied into this performance tonight, and into a somewhat similar performance in Omaha a few weeks ago. I am decidedly playing hooky from my duties in being here tonight. I have not any business to have spent two days this week in coming to Lincoln, but I am glad to do it if I can have any part in that courageous, intelligent movement which I am told lies at the heart of many of the members of this Association.

I want to preface my remarks by saying to you that I am trying to identify myself, insofar as I can, with your problems. Your presiding officer referred, although somewhat facetiously, to the fact that medical science as a science is of comparatively recent origin. I am a teacher of marketing and of advertising, and as a member of the Department of Economics in a University, I and my colleagues and men engaged in similar fields throughout the universities of the country are trying to see how the great forces which we employ in marketing manufactured goods can be employed for the benefit of society.

The task of distributing merchandise, my friends, in America—in a country with such enormous territory, with such a tremendous diversity of personal interests—the task of moving the popular mind so that it will accept standardized merchandise with the least friction, and consequently at the least cost for distribution—that task is one of the greatest economic tasks confronting America; and we find that the form of publicity which we call advertising, has been a force in accomplishing that end.

Now, there are very unlovely aspects in advertising. You and I frequently have had our stomachs revolted by the use which is made of publicity in the distribution of merchandise.

The first point that I would make with you is illustrated by the experience of our agricultural Department of Economics at the University of Wisconsin when recently it converted the state of mind of the farmer of the northwest, who was not getting a proper price for his merchandise, and who was striking out blindly at the existing economic system, and was willing, perhaps, to destroy it and to seek a new heaven and a new earth—some panacea which would remedy his present economic condition. In the face of that situation, what did we do? We sent our representative to the Pacific coast to examine the methods of cooperative marketing there in vogue. We held a great convention of farmers in the State of Wisconsin and recommended to them that instead of seeking state socialism or some untried panacea which would be worse than the condition in which they then were, they employ the methods which are known to the manufacturer today of creating a market for honest merchandise, for standardizing it in the public mind so that the public would be willing to pay an honest price for it and to give an honest compensation to those who produce it.

---

*An address delivered before the Nebraska State Medical Association at its Fifty-Fifth Annual Banquet, Lincoln, Neb., May 16, 1923.

Our remedy for the upset economic condition of the farmer in the northwest is not socialism, but is modern marketing, employing advertising. I tell you that frankly so that you can see that I, as a scientist I hope, and my colleagues are trying to employ modern forces for the solution of modern problems. We do not hesitate and we do not shrink fearlessly to investigate and to employ that machinery which has been found effective, and to employ it in the right way to solve what is the most vexatious condition, perhaps, that is confronting the American public. Nothing is so interfering with our governmental situation, whether in the states or in the halls of Congress at Washington, as the unrest of the farmer. Our remedy is not a panacea, but it is to employ modern methods of distributing merchandise in such a way that everybody will get value received.

I have been going around the country recently on a mission for the University, and incidentally I have been talking to groups of business men. I have been recommending to them the example of the medical fraternity. I point out to them if they will study the comedies of Moliere in the seventeenth century, they will find that of all the people at whom the finger of shame was pointed, the medical man stood foremost; that they might expect the business man and the lawyer to be cheats and charlatans, but they obsolutely knew the doctor was a quack! Moliere was a sick man all his life. He would not let a doctor come near him. In his comedies, immortal for their satire, he paints the jealous husband and other types of the day; but his sharpest barbs of satire are reserved for the doctor. In his last comedy he portrays a lot of little devils running down from the stage with squirt guns—the tool of the doctors of that day—in their hands and chasing the audience out of their seats.

If you come down to the eighteenth century and read the novels of the day, which are a fairly faithful picture of society, you will find the finger of scorn unhesitatingly pointed at the medical man. He was the man on whom the vials of the novelist's wrath and scorn were emptied.

Today, ladies and gentlemen, I point out to my friends in the business world that the professions stand at the head of contemporary occupations, and that of them all, the doctor is the uncrowned king of modern society; that he occupies a position in the public esteem which is not occupied by any other profession or occupation; that the board of health is the most powerful instrument in our modern communities; that we will do anything the doctor tells us to do. He is the high priest, the judge, and the jury, and we obey him without question.

Whence has come this astonishing transformation? From the fact that the medical profession has fearlessly used the scientific method; that instead of keeping their discoveries to themselves, they have recognized their community of interest; they have recognized their public responsibility; they have collected, analyzed, compared cases and published their results and placed their findings at the service of the public, and by the use of a scientific method have achieved the proud position which they unquestionably hold.

Perhaps I am a little prejudiced in the matter, because our University clinic dominates the town to such an extent we do not dare call our souls our own without the advice of the doctors. Nevertheless, that is the situation, and that is the story which I am telling different business men around the country, advising if they wish to achieve a similar high position in the mind of the public and wish to develop a similar confidence, they likewise must employ the scientific method.

Now, my friends, I say that to you for the double purpose of showing you that while I am preaching tonight to the medical profession and perhaps suggesting they employ some of the methods known to the business men, I have been much more saying to the business men, "Employ the methods used by the medical profession."

I want to call to your attention the fact that when scientists in general wished to convince the public of the validity of a scientific principle, they did not scruple to use means which were adapted to the popular intelligence. I speak not now of doctors, but of those great champions of science—Tyndall, Huxley and Darwin—who in the last century, confronted by the hostile audience which would not accept the least of their findings, confronted by the religious prejudices and lack of willingness to entertain even the first principles of science, were taken in hand by men who laid aside, for the time, their task of furthering scientific discovery in order to make truth prevail in the public mind.

If you will examine some of the essays and lectures of Huxley, you will be amazed, not so much at the penetration of his scientific understanding as at his profound comprehension of the public mind and his willingness, great scientist that he was, to spend his energies in making groups of ignorant people comprehend the service rendered to them by the scientists of the day. Huxley's lecture on a piece of chalk was delivered to a group of working men. He began by telling them how that chalk was something they could find in their own back yards. He established a sense of local pride so that they felt they were an important people because they found chalk in their own back yards. Then he told of the marvelous constitution of chalk, and laid upon their minds that chalk has been untold centuries in forming. So cleverly did he prepare his preliminaries that they could not deny the geologic truth he was laying before them without abating somewhat of their local pride in having this marvelous substance in their own back yards.

He has written another essay in which he explains patiently and laboriously what is meant by induction and deduction—by the methods by which the scientist arrives at his conclusions. He takes the pains to explain this to the people with no glimmering of science. Why? In order that the public may be served. He did not scruple to descend to the level of the public comprehension and to use what means he had at hand to persuade the public of his day of the validity of science. You and I today are standing as the beneficiaries of Huxley and Tyndall and Darwin and men of their generation, who by their laborious and painstaking methods, persuaded the public these things were so. While with one hand they fought the battle of science in the laboratory, with the other hand they fought the battle of science with the public.

I suppose we have all felt that the battle of the scientific method was won. I know I had unconsciously assumed that the public would follow its leaders and that it was no longer necessary to make an elementary exposition of the truths of science. But my confidence received a rather rude jolt a year or so ago when there came into the city of Madison a distinguished citizen of Nebraska, who proceeded to fall foul of our distinguished President, who is a biologist, and to declare he was an atheist, although President Birge has been a deacon in the Congregational church for a great many years, and has taught a Sunday School class for twenty years. This was not sufficient to establish his religiosity with William Jennings Bryan, and he attacked the University of Wisconsin as an atheistic institution; and the fathers and mothers went out thanking God they had some denominational colleges in the state so they did not have to send their sons and daughters to that institution, where they would be damned irretrievably!

I began to wonder if the battle for the scientific method had been won, or whether it was necessary for us to take up the cudgels again.

As an educator, it has been a serious question with me whether we ought not to examine pretty carefully the content of the minds of our students in certain elementary matters which we thought had been settled once and for all by society, but which we find have not been settled.

We have learned since the war, through the researches of psychologists and of sociologists, what the level of the average intelligence really is. We have known always that there was a great deal of fertile ground for the quack and the impostor, for the man who denounced intellectual methods; but we have learned since the examinations preliminary to the draft what the average mental age of the public is. It has filled every man with a responsibility to society with a new sense of his duty and with a new sense of his difficulty, and the danger of society. There have not been wanting sociologists who have pointed out that the small number of really instructed and intelligent men and women is a very thin red line which holds back the forces of unlettered barbarism; that very few people really seriously think; that the average man and woman would literally rather be shot than think.

I say to you, my friends, that these revelations have brought home to us a new realization of the task of the educated man as a leader in society. We cannot lay our armor down. The battle has not been won, and the battle never will be won. It must always be fought, and we must fight with the weapons that lie at our hands.

We learned also from the war that the difference between man and man is not to be gauged by a few years in age, or by relative educational or social advantages. When the first news of the barbarism of modern warfare reached me, I realized with an indescribable pang that there in my own classroom were men, one of whom would exhibit on the field of battle that saintlike devotion to country, that perfect flower of courage which we honor as a supreme revelation of the human soul in its hour of trial, during the horrible conflict. And side by side with him in the same classroom were sitting men who, if their passions were released, would rape women, torture men, and shoot innocent babies. So as I have said, the difference between man and man side by side in modern society, is not to be gauged by a slight difference in years, or by a trifle of difference in educational or social advantage; but it is to be measured in terms of geologic ages, and the unchained brute is ready to throw off the inhibitions of modern society. We learned that in the terrible cataclysm of the war.

The war taught us another sad lesson. During the period following it, we are appalled at seeing our gains of centuries swept away—a civilization destroyed—millions of people blotted out—and we look for some easy road to heaven—for some novel and simple means of recuperating the gains that civilization had won; and a wave of sentimentalism, of lack of realism, of unwillingness to face the facts, of desire for some panacea, has come upon society, and with it has come a colossal disbelief—cynicism of everything good and everything that makes for progress. That has been another of the great revelations of the war.

I believe, in my soul, that the reason we are confronted with so many quacks and fakers—that they find such an easy market in society—is because after the war people have said: "What is the use of laboriously building up the structure of science? Why not look for some heaven-sent method, some machine or manipulation or simple device to do in a moment—in a twinkling—the thing which the scientists take so long about?" That is one of the revelations of human nature that has come to us following the war and because of the war.

The medical fraternity has a responsibility even as the teaching fraternity has a responsibility. We have received the truth and it is our duty to make the truth prevail.

When Dr. Newman defined culture, he declared its essence was to make reason and the will of God prevail—not merely to believe yourselves in reason and the will of God.

I do not believe that there is any single method for solving the ills to which we are subjected today. I do believe, however, that the great weapon of publicity should be used, and should be used intelligently and fearlessly, by those who assume to occupy positions of leadership in our community.

I was very much enheartened and encouraged when I learned that a group of men in this body were considering whether it was possible to use a campaign of publicity for educating and re-educating and perpetually educating the public mind as to the basic truths of the scientific method as applied to medicine. I suppose that your attitude toward the employment of publicity in the medical profession is precisely what my own would be. We naturally revolt against it.

It seems a thing that a gentleman would not do. We think of vulgar and indecent examples of publicity. We think if that is the sort of thing we must do, we would rather be shot than engage in it. We would rather see our profession go down to defeat than to use weapons of that order.

I do not think, however, it is necessary for the medical profession in employing a campaign of publicity to use methods that will detract in the least degree from its dignity. I believe it is entirely possible to tell the story of medicine—its heroism, its martyrs, its wonderful achievements—in a way that will capture the public imagination and that will not descend into the arena with quacks and tricksters and fight them with their own weapons, but will take a higher plane and adhere to it long and unswervingly, and deliver a message of service to the lay reader.

There are things which that publicity can not do. There are also things which it must do. I have said it cannot be undignified. It can not be vulgar. Another thing it can not be—and this danger the medical man would be all too likely to encounter; it cannot be revolting to the public mind.

I saw presented before the Madison Hospital Society a very wonderful series of slides illustrating the reconstruction of faces during the war, presented by Dr. Brown, of Milwaukee. There were faces burned to a crisp and made back into a semblance of men—faces of malformed children rebuilt so that they became definite countenances and the boy or girl had a chance to go through life. It gave me a wonderful appreciation of the service of the surgeon, but at the same time, it made my several feet of entrails curl up inside me, and I was almost unnerved by that terrible revelation of suffering.

If you undertake publicity, in heaven's name don't scare the public by showing them people's insides! Don't show them hideous pictures of monstrosities. The point of view should be the point which you take in leading us through the valley of shadows. The wise and skillful physician or surgeon takes us by the hand and leads us through the vale of horrors without disgusting or shocking or terrifying us, shielding us from the worst perils—those of the imagination.

That same kindly, wise skill must be exercised in any campaign of publicity that is undertaken. You could so tell the story of medicine, of its heroes and of its achievements, of the obliteration of yellow fever and typhoid, of one great step after another in the all-triumphant march of the scientific method, that the public would come to have renewed faith in the laborious achievements of the laboratory, and would comprehend that if society is to be saved, it is not to be saved by the quack, but by the scientist who is willing to toil for a generation if he may but quarry a single stone to upbuild the wall of science.

I am not offering the medical fraternity a panacea against the ills that beset it. I am not primarily interested in the medical fraternity. I am interested in the public whose trust is placed in you, whose welfare is dependent upon your skill, and no less dependent upon your skill in persuading us that we should rely upon you. I am interested in myself and in my wife and in my boy, and I do not want them exposed to the malpractice of quacks. I want you to fight not for yourselves, but for society; and I want you to use courageously the weapons that lie at your hand, even as Darwin and Tyndall and Huxley did use the weapons that lay at their hand in their own day.

When we contemplate modern society, we are so overwhelmed by its problems and its complexities that we almost feel like saying, "There is no use." We are almost tempted to seek as a logical expression of our mood the philosophic attitude of the Hindu who banishes from his mind all passion, all desire, all will to achieve, all hope for progress, and in this attitude, contemplating his own navel, passes ultimately into Nirvana, the blessed state of holy unconsciousness. If we want to lay down the battle of society and for the rest of our lives contemplate our own navels and achieve Nirvana and give up the struggle, that is another question. But if we believe life lays upon us responsibilities for the struggle, and if we are not primarily concerned as to whether we ourselves are comfortable or happy or dignified, but if we realize that we have a job to perform, and that responsibility will be laid upon us commensurate with our position in society, then in heaven's name let us take up the weapons we have at hand! The public is being misled. It has a right to repose its trust in you as its leaders. Your action is your responsibility.

A STUDY OF THE PRESENT DAY ECONOMIC PROBLEMS IN MEDICINE—AN ESSENTIAL.*

C. A. Roeder, M. D., Omaha, Nebr.

CONTENTS.

I. Introduction.
  A. A Resume of Medicine and Man.
II. Two Important Present Day Problems.
  A. The Economic Problem.
    1. The Society of Medicine.
    2. The Cost of Medicine.
  B. The Publicity Problem.
    1. Medicine as Viewed by the Public.
    2. The Abyss Between Medicine and the Masses.
III. Suggestions for Reform.
  A. A Re-organized Medical Society.
  B. A Proper Publicity Effort Solely for the Public.

INTRODUCTION.

A. A RESUME OF MEDICINE AND MAN: Man has passed through (1) Folk, (2) Medieval, and into (3) Modern Medicine; exemplified by and based upon (a) credulity, (b) credulity and skepticism and (c) skepticism only. The greatly increased physical comforts derived through the advancement of medical sciences he has been unable to appreciate, basing his attitude of medicine upon his steadily increasing mental discomforts. Considering these three distinct eras in medicine, with specialization in all vocations increasing, science upsetting theories and beliefs of the credulous past, can it be wondered at that man is restless, seeks faith blindly, taking no time to stop to meditate on anything but commercialism? The rapid turn of events keeps him looking, in anxiety, for something new, enticing a momentary interest in various and well-advertised cults and fads; and can we blame him for this when we have completely failed to inform him what fundamental medicine is and what it is endeavoring to accomplish? Man's material progress has greatly outstripped his mental, which has been his greatest misfortune. The most serious example is his ignorance of his greatest benefactor, human biology or fundamental medicine, a knowledge of which is most essential in order to prevent or retard the present decay of modern civilization.

It appears that everything in and upon the earth is constantly adapting itself to an ever-changing environment except the art of the practice of medicine; it has always appeared too passive and lacking in initiative; too full of fear and jealousy; too few men in medicine being equal to the task medicine expects of them. This may be due to the fact that the study of medicine is scientific, while its practice is an art; science demanding and representing organization, while never has the work of art borne the name of a group or an organized effort. As the book, the poem, the play and the picture are products of art, so is the care of the patient; it can be nothing other than individualistic effort. Medicine has been greatly injured by over-specialization. The more specialized each branch became the more it, consciously or unconsciously, resembled quackery, because too many "pseudo-specialists," lacking knowledge and will power, were born. This pseudo- and hyper-specialization has resulted in bringing the patient directly to it, with an unbalanced economic relationship, in turn causing the public to cast aside the family doctor. This unbalanced service between the specialist and the public, brought about a gradual extermination of the real old time family doctor, a loss to mankind which can only be replaced by his return. This discouraging state of affairs resulted in the general practitioner taking up a more mercenary attitude, an indifference toward hard and scientific work, practicing only as he wanted to practice and not as the public wanted him to practice. His indifference to little things and the personality of the patient, a desire for undue compensation, also resulted in his feeling that the specialist was overpaid, that he himself was under-paid and thereby he made unintentionally a wide opening for all cultism. The specialist has been even more guilty in bringing all this about. Man has been forced, by inefficient medicine, to sooth his minor, imaginary and less remunerative ailments by patronizing the cults. Such ailments were too unprofitable for commercial medicine to "monkey with."

Our problems are plainly before us today. We need, for the sake of man in medicine, and medicine in man, to perfect these evils of over-specialization and to bring back the general practitioner to the place he once had and should always have, where he can be the root of all good in medicine. The specialist will then be forced, by this family doctor, to prove his claims; the general practitioner will then be back on his job, amply compensated, but not expecting more than he is entitled to. He need not envy the specialist; for the latter, in most instances, has been steadily committing suicide through his big fees and shallow foundation. Man needs the honest family doctor to protect him from pseudo- and hyper-specialism, as well as from the ravages of disease. We have, therefore, unconsciously and indirectly, forced the public back thousands of years into medieval medicine, by stimulating man's greatest weakness,—credulity—resulting in his adoption of the cults, which he must have in order to satisfy his faith and fear.

---

*Address of Chairman of Surgical Section Nebr. State Med. Assn., Lincoln, May 17, 1923.

Man has passed through class struggle for ascendency and revenue and is now entering group struggle, which when applied to medicine, will further increase the gap between the public and the family physician. Unless endowed with co-operative, well-regulated, scientific ability, backed by character and will power, with altruism overbalancing commercialism, all groups in medicine are doomed to failure because they are a step still further into evil medicine, forcing the public more into cultism and medievalism, which is wrecking civilization fast enough. We must take an entirely different and far more active interest in the economics of medicine, in order to protect and properly represent the practice of medicine in its gradual, but noble decline. No one can dispute that the demand for science of medicine is increasing and the demand for practice of medicine decreasing,—that is what we are aiming to do and are rapidly accomplishing with preventive medicine and prophylactic surgery.

Medical men are merely unchosen men from the masses, with the same mental and physical basic structures, the same proportions of emotions and desires, and the same characteristics. Their strongest impulse is protection for themselves and their families, favoring commercialism to altruism, at the same time admiring an individual mastery of conduct. They want liberty with security; control but not constraint; with an unconscious conception that human nature must be reckoned with above everything. Men's ethics depend entirely upon their age, their character and their will power. Since there never were two characters exactly alike, how can ethics be standardized? Men will always conduct themselves as their heredity and environment tell them and too many still live in a background of medieval faith and fear which has borne them and steeped them with the dye of commercialism. Can all men be expected then suddenly to sacrifice commercialism for true scientific endeavor when science wears such swaddling clothes for economic protection? The average man innately craves wealth, power, knowledge and religion, but the public expects a man in medicine to be above the average; they feel, and they are right, that a profession should appeal to only what is best in man. Are they finding out, that in the vast majority of professional men this is not true? If so, what will their reaction be toward medicine?

TWO IMPORTANT PRESENT DAY PROBLEMS.

A. THE ECONOMIC PROBLEM: The physician is partly to blame for the economic problem before him, because, as in all life, it is difficult for men to judge the merits of their own ability and to be content with that to which they are justly entitled. Each member in medical society feels that he is entitled to equal remuneration, while too often he is more of a liability than an asset to society in general. Oftentimes his opinion of some of his competitors is true. The economic problem is the greatest cause for the conflict among men in all vocations. It always has and always will be acute. In medicine it has suffered in silence because it has never had an impartial and just hearing, due to too many practitioners pretending a lofty abhorrence for the subject, too many practicing in ways they are ashamed to discuss openly and defend, and too many who are entirely too indifferent. Since the greatest problem within the ranks of medicine is due to economics, is it right that the society of medicine be indifferent to it? If medical men are merely unchosen men from the masses, an economic problem is the first to be considered. Why try to deceive ourselves! If medical men are of the chosen type, then they should long ago have united and fearlessly stood by some plan, wherein the economic problem could never have ascended to the role it plays today. The overpaid specialist, the underpaid practitioner, and the secret division of fees in the practice of medicine must have the most sincere consideration by medical society and an attempt made to compensate all honest medicine for its efforts. The main danger to medicine as a self-governing body, is the dispute over economics within its ranks, and if our society of medicine cannot decide, because of inertia or fear, the public will. The public is giving the practice of medicine its last chance; it has no use for dishonest and pseudo-specialists; indolent and deceitful general practitioners; inert and unprogressive societies of medicine! It wants to know all about the science and the art of medicine; it is gradually finding out more and more, and when it does discover that the economic question is the root of all evil in medicine it will very quickly find a remedy. It is our urgent duty to settle this question, not only to ourselves, but to the public, because the latter will socialize medicine at the first opportunity, not knowing that socialistic medicine will in turn be detrimental to mankind.

1. THE SOCIETY OF MEDICINE: There is no physician who does not yearn to communicate his ability to as many persons as possible. He may pretend to address only the elect, but this air of exclusiveness is sheer affectation. He has passed his undergraduate days in hard study and feels that he has a right to administer his art to as many persons as give him an opportunity. On one side of him we have his artistic genius, an extraordinarily intense form of sympathy; on the other side we have a practical basic outlook on life, in which protection for himself and family seems paramount. No two men in medicine can apply their art alike or agree on their varying conceptions of disease, but there is no legitimate reason on earth why they cannot agree on the ways and means of promoting and protecting medicine in society, and society in medicine. They are now facing innumerable personal complexes, must recognize a rapidly socialistic tendency in everything, must place principles above personalities and support society above individualism. If they fail it will be a question in the practice of medicine of the survival of honesty and shrewdness, and since man is naturally selfish, what chance will honesty have; and when state medicine gets in, there will be no chance.

Medical societies have always lacked unity of effort, have encouraged quantity instead of quality of membership, have taken up too much time on discussing the scientific side of medicine and have not spent enough time on the practical art of practicing medicine. This error has for long been pointed out by our general practitioners.

Medical societies should be a clearing house for disturbing differences among their members, should not allow a membership to be too easily obtained and maintained, which has resulted in many members, but few followers. Have we failed to note that following a precedent may too often be a snare and that the sound canons of any society are brought about only by co-operation along practical, not theoretical, lines? This state society should have the power and courage to go into any county society, regulate its evils and inform the public of its merits. What chance has a county society to regulate the conduct of its members, any one of whom can successfully appeal to the local public on grounds of jealousy? When the federal or state government enters a county, things look different.

Naturally, like all men, we have arrayed ourselves in hostile camps on questions of theory and belief, not merely because we are variously informed, but because we are mentally unlike. We, like all men, clashed first over economics,—we always have and we must admit it frankly; let us face this fact and settle it openly and decently. Until we do develop energy, power and fearlessness, we will continue to stand as we have—merely a little unprogressive, unprotected social gathering, dwindling gradually in numbers and influence, an example of sheer neglect of medicine in man and man in medicine. Scriptural phraseology, masters of antiquity, examples of shrewdness and cunning and our own indifference have long ruled us. How much longer?

2. THE COST OF MEDICINE: Our over-specialization, our lack of initiative, our desire to ease our own physical exertions and our impractical and uneconomical status, have resulted in an unbalanced expenditure for the application of the art of medicine, and also in too many hospitals. There are more hospital beds in America now than we

actually need, if we practiced medicine practically. The cost of medicine and the expense of hospital care is one of the main arguments the cults use in promoting a demand for their services. If we had only practiced a little more the patient's way, studied him as a patient instead of as a diseased specimen, there would be far less use for cultism today. How often we see the poorly trained medical man surrounded by well-trained nurses in an expensive hospital. He is far more dangerous to the public than any cult, as more is expected of him and the law grants him more privileges. The public is too easily deceived by the glittering equipment in the hospital, not knowing that trained physicians and surgeons are more essential. We need a radical adjustment along this line so that the average man can not only determine "who is who" in medicine, but can also afford to be sick and get what he pays for. The hospital is the most privileged, most sacred and too often the most deceptive and harmful edifice upon earth. Should not the state medical society have some authoritative relationship with all hospitals? The public indirectly holds medical society responsible for them.

B. THE PUBLICITY PROBLEM: Medicine does not need protection if it can obtain proper representation before the public. Through the training of scientific salesmanship, people are relying more and more upon advertisement, believing, incredibly, nearly everything they see in print or picture. Beyond a few ideas in hygiene they are almost medieval in their ideas of what to do when ill and whose services to seek. When a new cult arrives, fundamental medicine is not consulted because people look too much upon medicine as an organization of medical men, by medical men, and for medical men. We have taught them to do so. Our respectful silence often means to them ignorance, and with our aloofness and cloak of professionalism we have not aided the public in their perception of us. And paradoxically the public expects a profession to appeal only to what is best in man, but they will offer very little voluntary protection to it, simply because they have never been properly informed by medical society. Why do not philanthropists endow us with more laboratories and hospitals? Very easily answered—we have failed to build a sound foundation of effort which the philanthropist could see and understand. Individual examples of advertising by our shrewd practitioners have done these men and medical society more harm than good. We want only collective publicity by societies of medicine in order to present and thereby teach the science and the principles of the practice of medicine. To overcome this great abyss between all sciences and the masses, it will require an organized and constant effort. The new journal, Hygeia*, is a thought along the lines of proper publicity, and every man in this society should subscribe for at least ten copies and mail them to as many laymen. In proper publicity only can we overcome the layman's unfortunate view of medicine. Fundamental medicine—human biology—is solely for mankind and his greatest misfortune is that he has never understood it in that light.

SUGGESTIONS FOR REFORM.

A. A RE-ORGANIZED MEDICAL SOCIETY: New ethical standards are most necessary and should be made by the entire society, very practical and fair for all. Every member should place himself in the shoes of the general practitioner, the specialist and the layman in turn, and try to judge impartially what is justly due the others; at all times keeping uppermost in mind that the patient comes first and that the economic problem comes second. If there is not a uniformity of opinion as to the proper distribution of fees—and there is not—then this society should impartially and constantly study this problem and then decide firmly which policy it intends to recognize. The greatest mistake society of medicine has ever made is its indifference to quality, resulting in very little honor in membership. It has failed to recognize that the self-styled specialist breeds more dishonesty than the general practitioner who must come back stronger than ever, and who is bound to come back owing to better training and opportunities of journalistic study. His role is in the ascendency, and he must receive just and due compensation from the patient for his services, but no more. What is wrong in the economics of medicine when seventy-five per cent of general practitioners will accept or demand a secret division of fees? There are two sides to each question and we shall study both impartially. There is something radically wrong and unless this problem is settled very soon, with fairness to all, the society of medicine is doomed. I feel sure that the vast majority of medical men are essentially honest, but poor economic students, and that they would welcome a way whereby they would be protected without resorting to that unhappy method of secretly dividing fees. Are present day medical ethics based upon sound philosophy? The ethics for the interchange between specialist and the general practitioner should be drawn up only by those who have practiced on both sides, along practical, not theoretical lines. Arrange to help all practitioners, special and general, and we will see a rapid disappearance of the fee question.

---

*Printed for the public by the American Medical Association.

The practice of medicine should not be studied by arbitrary standards and we might well listen to F. E. Williams*: * * * "We have been setting up arbitrary standards by which to judge man; we have erected codes and laws and customs by which to measure and coerce him; we have poured out pity and love upon him and also hate and scorn; * * * we have done all these things and more, and yet never have we seriously in any proper scale made an attempt to learn really what he is and to understand him for what he is, his possibilities for what they are, his own desires and interests, be what they may. We are approaching nearer to the time when arbitrary standards, built up without knowledge, but as the result of empirical judgments, will be put aside for a time and man will study man for what he is in the same way he now studies other less important objects."

B. A PROPER PUBLICITY EFFORT SOLELY FOR THE PUBLIC: The time is here for expounding the principles of medicine to the public in a most impersonal way. I have discussed this freely before (1-2); in 1919 I recommended, and now more than ever feel, that we need a central bureau, with power and money, having a well-paid sociological adviser, who all the year round studies our problems and presents to the public the principles of fundamental medicine in their own language. Again I write as I did in 1919 that every member in this society can easily afford a few extra dollars per year for the uplift of himself and his society, from which he would receive the most satisfaction and the best protection he ever obtained. We can thereby, by impartial and impersonal representation, lessen this gap between medicine and the public. Journalistic efforts by able writers on scientific medical subjects would be most welcomed by the public; which efforts would not only protect everybody from the dishonest propaganda of the cults and fakes, but would also curtail the efforts of many members of medical society who misuse the press for personal gain. The layman has always felt that there cannot be too much publicity for conditions of security of life and property, recognition of honorary titles, scholarship and true scientific attainment. He feels that the best society is open for inspection, criticism and reconstruction, but he has no way of inspecting medicine—and he should have. The only clash, and there is a grave one, between medical science and the public is the lack of proper publicity. Why should not the public know who are the deserving men in medicine? But medicine must understand that it costs money and that Nebraska medicine could easily afford, for the benefit of mankind and medicine, a good sum of money per year, which with a membership of fifteen hundred means individually a small allotment. Think of the opportunity knocking at our door! Are we big enough, socially and individually to grasp it?

In order to save man from medievalism (cultism), in order to present only the science and principles of medicine to the public, which is craving to understand it, let us study a plan to overcome the abyss between scientific medicine and man. To those who can only look at this plan as a poor financial investment I can guarantee that the public will more than compensate for every dollar given to help them.

BIBLIOGRAPHY

1. Nebraska State Medical Journal, March, 1919.
2. Nebraska State Medical Journal, March, 1921.

---

*Modern Hospital 20. 141 (Feb.) 1923.

THE CULT MENACE.*

E. L. Bridges, M. D., Omaha, Nebr.

THE ORIGIN OF CULTS

The growth of various sects, cults, isms, and heresies opposed to the art and science of medicine is becoming of serious import to the conscientious members of the profession who recognize their solemn duty to be the care, protection and preservation of the commonwealth.

---

*Address of Chairman of Medical Section. Nebr. State Medical Association. Lincoln, May 16, 1923.

That sects exist in medicine is not to be marvelled at. They have permeated every branch of philosophy from time immemorial. "There is not accord even in the meaning of the word, philosophy."

"The existence of sects implies differences of opinion and differences of opinion imply imperfection of knowledge." (Gee). Interchange of opinions is conducive to knowledge. With the attainment of perfect knowledge sects would disappear. Sects, therefore, are conducive to gain in knowledge when their opinions are constructive.

The sects in older medicine—the dogmatists, the methodists, the empiricists, the pharmaceutists, and the expectants, are all reflected in present day medicine, and added much to our store of knowledge in the study of disease.

"The practice of medicine is a branch of philosophy and has to do with keeping the well healthy (hygienics); the protection of those exposed to disease (prophylactics); and the cure or treatment of disease (therapeutics).

The older sects were composed of men trained in science and art, who agreed on the fundamentals of medicine and disagreed only in the method of treatment.

Quite different are the various cults which have arisen in recent times. Their apostles originate outside the realm of science, they have no interest in the causation, prevention or control of disease and hold that all disturbances of mind or body can be cured by a single procedure, regardless of cause.

The older sects were conceived in a spirit of charity, benevolence and succor—the modernites are actuated in their activities by a purely commercial spirit.

The following advertisement clipped from a daily paper indicates wherein their interests lie: "Study Chiropractic: You can become independent for life; you are not too old or young to learn this greatest of sciences. Join the big 3000 student body."

CAUSES FAVORING DEVELOPMENT

The growth in popularity of cults is dependent upon the ignorance and credulity of the laity—the expansion of our laws originally designed as a protection to society, and the omissions of the profession.

The gullibility of the public is the sheet-anchor of the cults. Robbed of publicity they would cease to exist.

The stress and strain of life causes man to seek an effect along the line of least resistence. The popularity of cults represents a desire for the easiest way. Those of an emotional or psychic instability are unable to stand alone and are constantly seeking a magic medicine or method to restore them to health—the occult, the mystic and the miraculous hold an especial enchantment for them.

Those of a more stable temperament, but not possessing an inquisitive or analytical mind are easily convinced of the merit of a method of treatment by the marvelous cures reported in the daily papers, the glowing testimonials of 'men of prominence,' and the absolute cures guaranteed where all other means have failed.

The failure of the medical profession publicly to challenge, refute or denounce the astounding claims broadcasted is made capital of by the cult disciples and has made it possible for them to sway public opinion and even pass laws in our legislatures that seriously retard our progress in the prevention of disease.

LAWS

In many states the practice of medicine act has been circumvented and new laws enacted granting special privileges to certain cults to ply their trade on the unsuspecting public.

At first these laws were restricted to certain modes of treatment, but each succeeding year sees further privileges granted until soon they will enjoy all the privileges of a man of medicine, without any restrictions as to preliminary qualifications or scientific attainments.

Laws enacted during the past 30 years governing the practice of medicine have raised the time necessary to be spent in training from two to eight years in order that the public health may be entrusted to men of recognized ability.

The special laws being enacted in our legislatures today permit men working at menial labor, and without a high school education, to spend a few months in a "so-called college" as an only requisite to being granted a license to ply their trade on the public with one motive in view—namely personal gain.

It is noteworthy that while extra privileges are demanded of the legislatures each year the qualifications for a license remain the same.

OMISSIONS OF THE MEDICAL PROFESSION

We must admit that the medical profession by and large is responsible in no small manner for the psychology of the public today in matters pertaining to the cure of disease.

1. The average practitioner is notoriously unsuccessful in handling a certain group of cases, composing the functionally and psychically "unfit." This lack of interest in and deficient knowledge of these cases renders his treatment ineffectual and drives the afflicted individuals into the cults where they add their testimonials to the incapacity of the medical man.

2. The conflict, as a layman expresses it, between specialism and common sense is being fostered in our medical colleges and to our shame be it said that common sense is getting the worst of it.

The craze for specialism is rapidly destroying that intimate contact with the patient which was enjoyed by the family doctor, and enabled him to study the inter-relationship of functional and organic disturbances. The present custom of having a doctor for each organ in the body invalidates the information gained from a comprehensible consideration of the body as a whole and reacts to the detriment of the patient and the physician.

3. The laity is not interested in the fundamentals of medicine. Its interest begins and ends in treatment. Therapeutics has always been and is today the most neglected subject in the medical curriculum. The art of medicine is becoming a lost art. Its place is being usurped by a pseudo-scientific medicine. The lure of the laboratory is blunting our sensibilities and narrowing our powers of observation. Our interest in a case is in direct proportion to the multiplicity of pathological changes found. When the patient is run through the laboratory, had all his secretions and excretions tested, serologically, bacteriologically, and chemically he is passed on to the various "ologists", who see the body through the individual organ upon which they specialize; he is then often without rhyme or reason X rayed and after a cursory physical examination pronounced in normal condition and discharged with the admonition to "forget it."

He is theoretically well, but functionally he is unfit to carry on his business or social duties, and soon seeks relief and finds it in some cult much to the discredit of the profession.

4. Unnecessary and exhaustive examinations with consequent exorbitant fees in those in whom the diagnosis is self evident and in those in modest circumstances is reprehensible.

5. Meddlesome, unwarranted, and bunglesome operations aided and abetted by that nefarious and illegal practice—the secret split fee—is playing a stellar role in undermining the faith of the public in the art of medicine.

6. Diagnosis by X ray, laboratory and other corroborative evidence without a general examination or consideration of the symptoms and physical findings is unscientific and breeds haphazard methods.

7. The tolerance of immoral and unprincipalled men in the profession as criminal abortionists, drug venders, and charlatans, lowers our standard in the eyes of the public and justifies some of the criticism of our antagonists.

OBJECTION TO CULTS

The right of existence of cults is not denied.

That every individual has an inalienable right to elect the mode of treatment he shall follow is acknowledged. Protestation is not made against any particular method of treatment, where that treatment is known to be of value as evidenced by repeated successes. The assumption that because a method is successful in a certain group of cases it is a panacea for all ill is erroneous—furthermore there is no unity of thought among the cults each using a different procedure to attain the same result.

The objection to cults is premised by the facts that they are not qualified by fundamental training to distinguish cases in which their particular line of treatment would be beneficial, from those in which it might prove detrimental—that they do not admit the heterogeneous nature of disease and consequently are not able to distinguish communicable from non-communicable diseases or distinguish maladies in their incipiency when a cure is possible and that they impede progress in the prevention and spread of disease.

There is no justifiable reason why the educational qualifications demanded of a physician should not be demanded of all who are granted a license to treat the sick. Multiple standards are incompatible with efficiency to all.

If a certain type of treatment is beneficial in a selected group of cases and there are men who are expert in administering that special treatment it would be just and reasonable to grant that person a license to treat such cases under the direction of a person who has been properly trained in the diagnosis and differentiation of diseases.

REMEDIES.

CORRECTION OF OMISSIONS OF THE PROFESSION.

1. More interest and sympathy should be manifested in cases suffering from emotional and psychic disturbances. It may be openly confessed that lack of interest is due to lack of knowledge. In the quest for pathological problems, the end results of anger, fear, grief, worry, anxiety, and excitement on the body are lost sight of. The medical student should be more deeply impressed with the changes wrought in the body from causes other than organic.

2. Specialism is necessary. The science of medicine has advanced too rapidly for one brain to comprehend all the intricacies of the body.

The physiological dependence of one organ upon another renders it imperative that an inclusive study of the body be pursued before one branches into a specialty.

The present tendency to specialize without practical experience in general practice should be discouraged.

3. More attention should be paid to therapeutics in our medical colleges. The modern student leaves college with the idea that "diagnosis" is the aim of medicine. The patient is concerned in diagnosis only as it points a way to treatment. To neglect treatment is a breach of trust to the patient.

4. Exhaustive examinations with elaborate laboratory embellishments in patients in whom the diagnosis is self evident or in those financially unable to pay excessive fees should be discountenanced.

5. The secret split fee habit is playing a stellar role in driving people into cults through the "unwarranted and unnecessary operation" gateway. When a patient entrusts his life to a physician and that physician finds that he needs counsel in the case he should be morally obligated to select a man recognized for his diagnostic acumen, sound judgment, and technical ability to assist him.

When his judgment in the selection of a confrere is biased by "the paltry dollar" he violates a sacred trust placed in him by the patient. If the present law cannot be enforced an open split fee act might remove the handicap from the man of ability and honor.

PUBLICITY

The cults depend entirely upon publicity to spread their propaganda. If we are to meet their arguments, dispel their criticism and expose their fallacies it must be in the open and not within scientific meetings.

Medical men are averse to publicity: First, because it is deemed unethical to discuss professional subjects openly, and second because they feel that their position in the world of science does not need a defense; however, they are morally obligated to protect the public against disease and when a menace arises that threatens to nullify that protection they are equally obligated to fight; publicly if that be the most efficient method of attack.

To be effective a public campaign must be nation wide. No good can come from success in isolated districts.

That a movement may have national support it should be sponsored by the American Medical Association, whose province it should be to lay out a program ramifying to every county society in the United States.

The following abstract plan is suggested:

COUNTY SOCIETY

Political. A committee to be appointed to ascertain the views on medical matters of primary candidates for election to the legislature and report such to the county society for its guidance. Active participation of all members in the primaries and the election.

PUBLICITY

The publication in the lay press of the county of clean wholesome articles dealing with medical matters of interest to and for the education of the public; such as, articles depicting the lives and achievements of great men in medicine—what has been accomplished and what is being done in the control of such diseases as syphilis, tuberculosis, malaria, typhoid, diphtheria, etc.

The progress made in the prevention of disease through vaccination, serum treatment and hygiene; the part played in limiting the spread of diseases by quarantine and sanitation; and the importance of early recognition of disease; the care and feeding of infants; the role flies, mosquitoes and vermin play in spreading disease, the value of fresh air and exercise, and such other subjects as might be of interest or value to the public.

It should further be the duty of county societies to ferret out and prosecute all members of the profession guilty of acts in violation of state and national laws.

STATE SOCIETY

The employment of an efficient high powered publicity agent whose duty it shall be to safeguard the interests of the profession and the public in the state legislature.

The appointment of a committee to map out a legislative campaign in regard to multiple standards of licensure—inadequate preliminary qualifications—unjust discriminations favoring any group engaged in the art of healing—combating legislation designed to nullify and abrogate health laws—combating legislation to curtail the right of regular practitioners in the use of proven remedial measures—and such other legislation as may be proposed in the future conceived in a spirit of commercialism and designed to lower medical standards.

AMERICAN MEDICAL ASSOCIATION

Complete censorship over publicity campaigns—publication of articles on medical subjects in the popular magazines and financial, legal, and moral support to state and county societies in their campaign to educate the public in the preservation of health and to suppress vicious medical legislation.

THE INSULIN TREATMENT OF DIABETES.*

LeRoy Crummer, M. D., Omaha, Nebr.

The discovery of insulin represents again the romance of scientific medicine. The whole history of medical progress is marked by a sequence of seemingly chance discoveries which bring successively different disease conditions under control. Unfortunately, the stress of strictly medical training has deprived the profession as a whole of opportunity to develop a definitely logical mind, so that the newer discoveries are often widely accepted without proper discrimination and the pseudo-scientific stands for a while on the same basis as the true discovery.

Insulin ranks as a true scientific discovery and in the final analysis seems almost accidental, but the vast amount of research on ductless glands in general and the pancreas in particular, together with the accumulating knowledge in the field of metabolism have prepared the way so that the accidental element in this discovery was only in the logical analysis leading to the final step. Dr. Banting and his co-workers appreciated not only the scientific aspect of the question, but were likewise cognizant of the history of similar discoveries and tried in every way to protect themselves and the public from exploitation and erroneous publicity. They were more successful in this endeavor than others have been in similar circumstances, but nevertheless, an untrammeled and sensation loving press has made the work of the medical profession difficult by broadcasting insulin as a sure and easy cure for diabetes.

Long before insulin was available for clinical purposes, requests for information concerning the new cure from patients and physicians began to pour in upon the internist. With the increasing momentum of newspaper exploitation, it is but right to analyze the present status of insulin.

The physiologist, the chemist, and experimental fellows are all devoting much attention to perfection of the fundamental idea, and may produce a method of treatment truly ideal, but our concern today must be only in what has been accomplished, not in what may be done in the future.

Insulin is derived from the islands of Langerhans, and probably represents the internal secretion of the pancreas. New methods of preparation are being sought and a plentiful supply of a standardized product is only a question of time. At present, no accurate form of measurement is known but the material is in solution, each cc. of which represents a definite number of "units." The "unit" theoretically is just sufficient of the active principle to reduce blood sugar to 0.045, in a 2 Kg. fasting rabbit within four hours. The unit is a measure of potency only and must not be considered a dose, but dosage must be estimated in units and not in cc. Administration must be subcutaneous.

---

*Read before the Nebraska State Medical Association, Lincoln, May 16, 1923.

However much some form of oral administration is to be desired, at present it is impossible, and all imitation drugs offered as a substitute may be considered fraudulent. It is to be hoped that ultimately some simple method of administration may be found.

The units in proper dosage are injected subcutaneously thirty minutes before meal time. The effect of insulin is to permit the burning of ingested carbohydrates exactly as if the carbohydrates met a normal secretion of the pancreas. In addition to correcting carbohydrate oxidation, insulin also tends to correct that peculiar change in metabolism which results in acidosis. Under proper administration, the urine becomes sugar and acetone free in two to three days.

Insulin should be given only under control of blood sugar determinations and the object to be sought is the establishment of a normal blood sugar level on a diet liberal enough to sustain a moderate activity of mind and body.

The first injection should be only two or three units as an occasional case may be found extremely susceptible. If no toxic symptoms develop, it is then safe to adjust the drug to the necessities of the case and once sugar free, the number of units must be increased in direct proportion to the glucose content in the diet. The symptoms of susceptibility or overdosage are due to the sudden production of a hypoglycemia. Collapse, sweating, rapid heart, peculiar nervous manifestations are the characteristic manifestations. While such condition may seem dangerous, the antidote of glucose or fruit juice is immediately effective.

The selection of cases for the use of insulin is of great importance. The newspaper publicity has created the general impression that a diabetic can have insulin and immediately gratify any food desire. I have no doubt this might be done and a fat diabetic millionaire might travel with his physician and laboratory technician and eat the feast of Lucullus, if Lucullus still serves banquets. But for the ordinary patient and every day physician, dietetic control and treatment is still essentil and there is no indication for the use of insulin when the patient can be held sugar free on a diet sufficient to meet daily needs without loss of weight. The obese individual whose only symptom is glycosuria does not need insulin, nor does the thin diabetic who holds a constant weight with a moderate glucose tolerance and no tendency to acidosis. In these two classes of cases, the physician can easily establish a dietetic balance which will be permanent just as long as the patient is amenable to the necessary discipline.

In juvenile and adolescent cases, in thin adults, in cases where necessary dietetic control results in emaciation, and in the severe cases of any type which have developed acidosis, the use of insulin is indicated. It is in exactly these types that the use of insulin marks the great advance in the treatment of diabetes. There is one other very definite indication for the use of insulin. There has always been a grave risk in operating on anyone with glycosuria. The time hitherto required to get these patients free from sugar has frequently caused an increased risk of the underlying physical condition. With insulin this period can be markedly reduced and the promptness with which this risk can be removed is a definite indication for the use of insulin before operative attack, whether the surgical indication is a general one, or is based upon one of the numerous surgical complications of diabetes.

Experience to date indicates that insulin treatment must be continuous. Just as long as insulin is injected, the patient may be kept sugar free on a diet whose glucose content is directly proportioned to the number of units administered. In the reported cases and one of my own, there is some evidence, that following continued treatment, there is a slight increase in sugar tolerance, thus in a juvenile case under my observation, careful dietetic treatment could only bring about a glucose tolerance of 50, whereas after two weeks insulin treatment, administration of 120 grams of glucose equivalent, has not shown sugar in the urine.

There is a remarkable agreement in the reports of cases already published, so much so, that I have been able personally to verify, in a small series of eight cases, all of the points discussed, except the immediate relief of diabetic coma, which is one of the striking results of insulin treatment.

Many cases of impending coma have been relieved by the use of insulin, not merely temporarily as in the old alkaline treatment, but so completely that further treatment was able to establish a complete and continuous change in metabolism so that fairly sufficient diets could be given without the appearance of sugar or acetone.

It is to be hoped that some essential improvement in the method of treatment will be discovered so that an increased tolerance can be established to such a degree that sugar metabolism will be improved to the extent of a real cure. In the light of our present knowledge, however, insulin is a treatment for severe cases and complications only, and is necessarily a method which must be carried out in hospital service under continuous control.

MANAGEMENT OF ACUTE BRAIN INJURIES.*

G. E. Neuhaus, M. D., Omaha, Nebr.

We mean by "Brain Injuries" pathology of intracranial structures produced by violence with or without fracture of the cranial bones.

This pathology may be of great variety; large or small cortical hemorrhages, hemorrhages into the hemispheres or the basal ganglia; contusions, bruising and laceration of the brain; compression by depressed fractures; localized or general cerebral oedema, which together with the distension of the ventricles by dammed up cerebro-spinal fluid produces the condition known as "wet brain". Any or all of these conditions may be present.

A great deal of the importance of this pathology is derived from the fact that the brain is lodged in an unyielding membranous casing, the dura. As the brain, itself, is only slightly compressible, anything encroaching on the small reserve intradural space produces serious effects on it. In traumatic cases, when pressure develops rapidly, giving the brain no time to adapt itself, danger soon arises.

In order to understand the significance of the symptoms which result from this increased pressure, it is necessary to consider the pathological physiology of increased intracranial pressure. This has been studied experimentally by Kocher, Cushing and others.

The first effect of increased pressure is stasis of the cerebro-spinal fluid through compression and blocking of the subdural spaces which interferes with drainage of the ventricles.

If pressure increases, it affects at first the local, then the general cerebral circulation leading to local and later to general cerebral anemia. When this anemia reaches the medulla the latter reacts by increased stimulation of its vasomotor mechanism and of the vagus nucleus with a resultant sharp rise in blood pressure and a slow and bounding pulse. In this manner dangerous anemia of the bulb is prevented until a still further rise in the intracranial pressure again threatens the bulbar blood supply. This race between increasing intracranial pressure and constantly rising blood pressure ends only when decompression of the cranial contents takes place, either spontaneously or artificially, or by death, when the bulb has become exhausted. In the latter instance just before exhaustion comes on the blood pressure may be twice as high as in the beginning and the pulse rate as low as forty or thirty per minte.

Immediately after a head injury of any severity the patient is in considerable shock; if not unconscious he complains of much headache, which may increase. His pulse is rapid, feeble, and irregular; his respiration shallow, thirty or forty to the minute; the systolic blood pressure below one hundred. His temperature is subnormal. All reflexes are diminished or absent. The pupils are more or less enlarged unless cortical irritation by hemorrhage or depressed fracture produces pin point pupils even in the stage of deep shock.

At the end of six to twelve hours the patient comes out of shock and the neurological symptoms become evident. While these in themselves are extremely important, they must assume second place in the face of the gradual and progressive development of intracranial pressure, which so frequently occurs.

This phase of abnormal intracranial pressure Kocher divides into four stages. During the first stage the patient is drowsy or stuporous, he may complain of headache, while pulse, blood pressure and respiration show no or only slight alteration.

The ophthalmoscope now reveals occasionally a slight haziness and oedematous blurring of the nasal margin of the optic discs.

---

*Read before the Elkhorn Valley Medical Society, Febr. 21, 1923.

The spinal manometer even in this early stage registers an increase in pressure, twelve to fourteen mm., instead of the normal five to seven mm.

Operation in this stage is not indicated and palliative medical treatment will bring about recovery in 70% of the cases. The technique of this will be described later.

This first stage may last an indefinite time and then merge into the second, where unmistakable signs of intracranial pressure high enough to produce symptoms make their appearance. If there is a subtentorial hemorrhage, the second stage comes on rapidly, as a rule—a few hours after the injury, on account of the proximity of the vagus and vasomotor centers. The pulse may drop to sixty or fifty-five per minute and systolic blood pressure rises. The patient is restless and delirious; he may be stuporous, but at times it is possible to rouse him from his stupor. Venous stasis makes him markedly cyanotic.

The ophthalmoscope reveals the veins as much larger than the arteries, the discs are more or less generally blurred and there may be a beginning papilloedema.

This is undoubtedly the ideal stage for a decompression operation, because the danger from operation is not excessive and although the patient may recover without operation the chances that he will have a permanently damaged brain are great, as the delicate cortical cells after having been subjected to such prolonged and greatly increased pressure undergo degenerative changes with secondary gliosis.

If pressure continues to increase, the bulb shows signs of beginning exhaustion so that instead of a steady increase in blood pressure, there occur fluctuations with the result that at times the blood supply to the medulla is inadequate and a certain amount of anemia of the bulb results. During these periods of deficient blood supply respiration fails and definite periods of apnea occur i. e. Cheyne Stokes breathing. Cyanosis now is extreme and the veins of the scalp, forehead and upper eyelids become dilated.

The ophthalmoscope demonstrates papilloedema or choked disc and the pressure of the cerebro-spinal fluid mounts to twenty or thirty mm. of pressure.

Operation in this stage is imperative, but as the best moment has passed, the mortality is very high. Spinal drainage at this stage is dangerous and has resulted in sudden death, presumably through the bulb being jammed against the edges of the foramen magnum by pressure from the distended ventricles above, as soon as the equalizing pressure of the spinal fluid from below has been removed.

The fourth stage is the stage of medullary exhaustion; Cheyne Stokes respiration continues for a while, the pulse rate rapidly rises to one hundred twenty or one hundred forty and the respiration is increased to forty or fifty, becoming shallow until it ceases altogether, the heart continuing to beat for a while.

The routine method of treating these patients (with the exception of those offering clean cut surgical indications, as depressed or compound fractures) has been to wait for the occurrence of signs of markedly increased intracranial pressure, a slow pulse, high blood pressure, choked disc and perhaps even Cheyne Stokes breathing, before proceeding to a decompression operation. But these symptoms are late symptoms, high intracranial pressure has existed for some time, before they appear and advanced far beyond safe limits. The bulb has been struggling against the onset of anemia, perhaps for hours. The most auspicious time has gone by.

This is borne out by statistics. Besley, in 1915, published from the records of Cook County Hospital, 1000 consecutive patients having fracture of the skull with a mortality of 53%; Le Count in 1920 collected 908 cases, 547 of which came to autopsy.

During the ten years from 1910 to 1920, there came under the observation of the writer at the Denver County Hospital and in private work, eighty-seven cases of brain injury sufficiently severe to call for a neurological consultation. The total mortality was 52 or 60%. Twelve of these died from shock, forty gave signs of high intracranial pressure, slow pulse, high blood pressure, many some degree of choked disc and Cheyne Stokes breathing. Thirty of these patients were operated upon by different surgeons with a mortality of over 66%—twenty deaths; while the remaining ten were far in the third and in the fourth stages of brain pressure and not in condition to be operated upon.

In addition to this immediate high mortality we must take into consideration the late results of this older method of treatment in judging as to its efficiency.

These late results in many cases are an emotional instability, either depression, excitement or irritability; persistent headaches; easy fatigability, making prolonged mental or physical effort impossible, dizziness, disturbance of memory and sometimes epilepsy. It is a common saying, justified by the frequency of these conditions, that no man is ever as good after a fracture of the skull as he had been before.

Except where we have to deal with cases of purely functional nervous trouble, that is to say a traumatic neurosis, resulting from brain injury, these cases will frequently be found to be the ones who had shown symptoms of extremely high intracranial pressure and who had a long protracted period of recovery.

Even weeks and months after their apparent recovery, these patients will be found to have the demonstrable evidences of increased intracanial pressure shown by congestion of the retinal vessels and increased intracranial pressure as demonstrated by high manometric reading of the spinal fluid.

There can be no doubt that in severe head injuries the factor which most frequently produces death is the exhaustion of the medulla by long continued efforts to maintain its blood supply against tremendous intracranial pressures. That this dangerous pressure, as the result of traumatic oedema results many times in cases where even the post mortem examination fails to demonstrate any fracture either of the vault or of the base, must be constantly borne in mind. It can not be stated too often that the presence of a fracture of the cranial bones in patients suffering from head injury is not in itself the element of danger, but the increase of intracranial pressure by oedema or hemorrhage.

The old treatment by expectant methods; catharsis, and ice bag to the head and rest after the most obvious surgical indications have been taken care of, is unable to affect intracranial pressure in any way and it is therefore useless to try it. The following method which was first worked out by William Sharp gives much better results.

In all surgical cases of head injury, after the patient has recovered from shock, lumbar puncture should be performed and the pressure read on a mercurial spinal manometer. If the reading is above 12 mm., draw off enough fluid until the pressure is reduced to normal—about 5 mm. The amount necessary to withdraw may vary from 10 to 35 cc. If it seems indicated, the drainage should be repeated after 12 or 24 hours, depending somewhat upon the original height of the pressure. If the patient's symptoms improve and the venous congestion in the retinal vessels becomes less, drainage need not be repeated. If, on the other hand, this improvement does not take place or does not last, repeated tappings should be performed. It may be necessary to do it daily for a week, then every other day until the pressure remains normal. In many cases this can be accomplished within ten days. The patient should be kept in bed for two or three weeks after the spinal pressure has become normal.

If this treatment fails to relieve the patient's condition; if headache, restlessness, or somnolence alternating with wakefulness increase, or if convulsions or coma occur, the drainage treatment is evidently not sufficient to relieve the rise in intracranial pressure. In order to make certain of this the ophthalmoscope should be used daily to watch the retina as significant changes take place in the disc in addition to congestion of its veins. Usually the temporal half of the disc first becomes hazy, later the entire disc looks blurred. These changes precede the onset of papilloedema. If these changes in the condition of the patient are noticed, it becomes necessary to proceed at once to do a subtemporal decompression and, if necessary, a double decompression should be done if the patient's condition demands. Further temporizing will only endanger his life and lessen his chance to survive an operation.

Of the last ten cases the writer has been privileged to see with different surgeons during the last two years, drainage was sufficient to bring about recovery in four cases, while of the six who were operated upon, four recovered and two died, a mortality of only 20% against 60% by the older methods.

The relief of excessive intracranial pressure as a result of brain injury, with or without fracture of the skull, furnishes the first and most urgent indication for a decompression operation, but it is self evident that there exist frequently other urgent surgical and neurological reasons for trephining.

Depressed, compound and comminuted fractures and the arrest of hemorrhage, are purely surgical conditions which urgently demand attention.

Later on convulsions, especially of the Jacksonian type, paralysis and other neurological conditions call for careful study, both by the surgeon and the neurologist, with a view to possible operative relief.

There is another class of acute brain injuries which is too often left to itself, the birth injuries of the new born. While these cases frequently get well in spite of considerable damage to the brain, many of them later on become feebleminded, develop convulsions or go through life suffering from some other organic nervous disease, as Little's disease.

Immediately after a difficult birth, these children remain asphyxiated and spontaneous respiration is long delayed. They do not suckle normally and may have to be fed with a dropper.

On examination one finds pupillary inequalities; an irregular pulse and rhythmic variations in respiration, which point to bulbar irritation; dilated veins of the scalp, the forehead and the retina, indicating high intracranial pressure. Convulsions or muscular twitchings are apt to occur.

In 1909 Cushing reported nine cases of infants operated on by himself for this condition, with four apparently perfect recoveries. Many other cases have since been done by others. These little patients are usually operated on between the second and the twelfth day.

In closing, the writer desires to quote a few illustrative cases:

1. Illustrating success of treatment by drainage:

A. S. Male, seven years of age, fell off a porch railing to a concrete path and was immediately picked up unconscious by his mother.

When examined by the family physician one hour after the injury he was still unconscious and in shock with a temperature of 96.6°, pulse 100, respiration 30. There was a hematoma over the entire left side of the scalp; free hemorrhage from the left ear, left subconjunctival hemorrhage. The pupils were partially dilated and reacted poorly to a flashlight. Patellar reflexes were absent; Babinski and Oppenheim reflexes positive on the left side.

Five hours later when the patient had reacted to the measures employed to relieve shock his temperature was 99°, pulse 90, respiration 25, systolic blood pressure 108. The boy was semi-conscious, could be made to answer questions, complained of headache. There were no paralyses. The pupils were normal in size, reacted somewhat sluggishly to light. The knee jerks were present, the left more active than the right, Oppenheim and Babinski reflexes present on the left side.

The fundus in both eyes showed enlarged veins, the nasal margins of both discs were blurred.

A lumbar puncture with a spinal mercurial manometer gave a reading of 12 mm. of mercury.

The treatment was expectant because the relief obtained from the first lumbar puncture when 15 cc. of a bloody fluid were removed was immediate and marked. The spinal drainage was repeated daily for four days, then every other day for a week and the boy discharged at the end of three weeks with impaired hearing on the left side. The tendon reflexes were equal and both fundi normal.

When seen two months later the boy was physically and mentally normal and reported by the mother not to show any more emotionalism than before the injury.

An X-ray examination showed an extensive linear fracture of the left side of the skull.

2. Operation demanded by neurological symptoms indicating definite brain lesion:

B. K. Two years and two months old male, was hit by a boy on a bicycle on March 15, 1920. He was unconscious several minutes and seen by the family physician within half an hour, when he was semiconscious and in shock with a temperature of 97°, pulse 130, respiration 32. There was a slight contusion over the right parietal eminence, slight bleeding from the nose, none from the ear. There were no convulsions and apparently no paralyses. The pupils were dilated, reacted sluggishly to light, the reflexes were diminished; the plantar reflexes were absent.

For a period of six days the child seemed to progress nicely, although inclined to be somnolent. Late at night on the sixth day he developed a convulsion, beginning on the left side of the face, extending to the left arm and then becoming general.

On the morning of the seventh day the boy was seen by the writer in consultation with the late Dr. O. S. Shere of Denver. He then had a temperature of 99.4°, pulse 80, respirations 22, systolic blood pressure 112. He was drowsy and stuporous, but could be roused, when he would cry and a slight inequality in the movement of the two sides of the face, which seemed to be slightly but distinctly weaker on the left side, was noticeable. His left arm was distinctly weaker than the right. The right pupil was larger than the left; the knee jerks were both exaggerated, stronger on the left than the right. An exhaustible ankle clonus and a Babinski reflex were both present on the left side.

During that day and on the eighth day, the child had several convulsions, all beginning on the left side as before. Lumbar puncture at that time showed a straw colored fluid, 14 mm. of pressure.

The ophthalmoscopic examination, after dilatation of the pupil with one drop of a 4% solution of cocaine hydrochlorate, showed blurring of the disc in the right eye and the same condition, though less marked, in the left.

Operation was decided on and a right subtemporal decompression performed. At the upper angle of the opening in the dura, a subdural clot was removed.

There were no further convulsions after the operation and the hemiplegia had disappeared.

About a year later the child was reported to be developing normally.

3. Severe brain injury. Decompression operation. No fracture found at necropsy.

On May 27, 1922, W. W. Male, 49 years of age, fell forward striking on his forehead and on examination two weeks after the fall, during which time he had five general convulsions, was found to have a paralysis of the third, fourth and sixth nerves of the right side and of the sixth on the left. There was partial paralysis of the seventh nerve on the right side of central type; incomplete hemiplegia on the left side with increased tendon reflexes and Babinski toe signs. The pupils reacted sluggishly to light and accommodation. The ophthalmoscope showed advanced papilloedema. The fluid obtained by lumbar puncture was bloody and under high pressure.

A right decompression operation was decided on and performed by Dr. Ford. When the dura was incised a large supracortical clot was removed. The patient died on the second day after the operation.

When at the necropsy the brain was removed, a large clot was found in the posterior fossa. The brain was soft and oedematous and on incision the substance of the left temporal lobe was found to be lacerated, the laceration extending into the lateral ventricle and the ventricle, itself, filled with bloody fluid.

Careful search failed to reveal any fracture either of the base or of the vault.

This case proves the contention that the presence or absence of a fracture is not the factor of first importance in head injury.

4. Fracture of skull. Drainage with relief of symptoms. Return of intracranial pressure necessitating decompression operation. Recovery.

The patient, a young man, was thrown by his horse, struck on his head and was found unconscious some time after the accident. When seen on the following day in consultation with Drs. J. S. Anderson of Kennard and W. H. Pruner of Omaha, the patient was comatose, but could be roused sufficiently to answer questions. No traumatism except a slight bruise over the left parietal bone was found. The pupils reacted sluggishly, the left was a little smaller than the right, but no other neurological signs were present. The veins of the fundus were much enlarged. The systolic blood pressure was 140, the pulse 70. The spinal fluid was under great pressure. Enough of the fluid was removed to bring the pressure down to normal with the result that the patient became conscious almost immediately and was able to answer questions in a lucid manner, stating that his headache had almost entirely disappeared.

On the following day, on the return of coma, another spinal drainage was performed by Dr. Anderson, but although there was some improvement, on the third day after the accident the signs denoting increasing intracranial pressure became more manifest. There was at that time a good deal of congestion of the veins of the forehead, the pulse was about 65, the blood pressure about 145-150. In view of the fact that in spite of drainage, the symptoms increased, a decompression operation at the apparent site of the injury was decided on and the patient was trephined by Dr. Pruner. A linear, slightly depressed fracture was found. The dura was found bulging and on incising it a large amount of bloody serum escaped, while the brain, itself, was very oedematous. This patient made an uneventful recovery.

CONCLUSIONS:

1. In injuries to the cranium, the factor of greatest immediate danger is the development of high intra-cranial pressure, whether due to hemorrhage or oedema.

2. The presence or absence of fracture of the cranial bones is of secondary importance.

3. Simple drainage of the spinal fluid by repeated lumbar puncture is frequently sufficient to prevent dangerous intra-cranial pressure and guards against the development of the later chronic effects of head injury.

4. If simple drainage is not sufficient to bring relief, decompression must be resorted to.

5. The most auspicious time for operation has passed if Cheyne Stokes breathing, papilloedema and high blood pressure are permitted to develop.

6. The ophthalmoscope and the spinal mercurial manometer are instruments of precision, which permit the physician to determine when to operate with safety and fair expectation of success.

THYMUS DISEASE IN CHILDREN WITH REPORT OF CASE.

H. E. Flansburg, M. D., Lincoln, Nebr.

Several reasons have prompted me to write a paper on diseases of the thymus gland. In the first place a case of enlarged thymus in a child came under my observation recently and though the symptoms were typical the nature of the illness was not suspected. Second: It is a condition which though not uncommon is usually overlooked. Third: It should be of interest to every branch of medicine because all branches must recognize and come in contact with it. The nose and throat man may be called to relieve a case of supposed laryngeal obstruction. The surgeon may be called in consultation preliminary to surgical interference. The roentgenologist must be competent to interpret the thymus shadows and instigate appropriate treatment, and above all the general practitioner and pediatrician must be constantly on their guard.

The thymus gland develops from the third branchial cleft and lies in very close contact with the thyroid and parathyroid glands. Later on in embryonic life it passes in front of the left innominate vein and descends into the superior mediastinum, spreading over the pericardium and becoming entirely intrathoracic.

The thymus is formed by two entirely independent lobes. It lies just behind the manubrium sterni in the superior mediastinal space. It covers the base of the heart, the origin of the thoracic vessels such as the aorta, pulmonary artery, innominate veins and artery, the vena cava and the trachea. It also comes in contact with the vagus, inferior laryngeal and phrenic nerves. Laterally it comes in contact with the pleura. In children the upper pole extends one or two cm. above the episternal notch.

It was formerly thought that the thymus gland gradually increased in size until the second year of life and then decreased. Today it is thought by many that it continues to increase in size during the developmental stage, and reaches its maximum beween the ages of eleven and fifteen years. At this age according to Crotti it weighs about twenty-seven grams. During the first five years its average weight is from five to thirteen grams.

As to the exact function of the thymus gland very little is definitely known. There are many theories, partially substantiated by experimental work on animals, and also based on clinical observation. It may be regarded as an established fact, however, that the thymus gland is a necessary organ in infancy and that it has great influence over nutrition in general. There is strong evidence that it is an internal secreting organ which bears close relation to other ductless glands. After thymectomy there is usually a hyperplasia of the thyroid gland and the reverse is often true. This point is of great practical importance, since it allows us to understand why after a goiter operation we may have to deal with a mechanical as well as a functional hyperplasia of the thymus gland.

After a total thymectomy in dogs there is no change at first. Three or four weeks later the animal begins to show retarded growth, diminishes in weight, and acquires a spongy pasty appearance due to fatty degeneration. Cachexia soon follows this stage. The hair falls out, extreme muscular weakness takes place and a marked tremor develops. The cachectic stage lasts from three to twenty months and then death takes place after the animal has been in thymic coma for several days. Thymectomy performed on very young animals has a marked effect upon the development of the osseous system. The bones become soft and rachitic, showing curvatures and deformities. This osteomalacia, involving especially the spinal column, affects also the pelvic bones, thorax and skull. If this insufficiency occurs in a growing skeleton rickets with all its deformities will result. If, however, it occurs in fully developed bones then osteomalacia and osteoporosis will result.

The muscles in these animals become extremely weak. The fibers lose their striations and atrophy, and the connective tissue is greatly increased.

It is interesting to note at this point that hyperplasia of the thymus is a very common accompaniment of myasthenia gravis and may have some connection with this obscure disease.

Enlargement of the thymus may exist without producing symptoms. On the other hand sudden death may be caused by a slight injury, administration of an anaesthetic for a surgical operation, or some acute disease. Death may be preceded by repeated convulsions, high fever or intermittent attacks of rapid breathing with or without signs of mechanical obstruction. In some cases tracheal obstruction or pressure on the circulatory or nervous system is the probable cause of death.

We do not know to what extent general intoxication plays a part. In many cases of enlarged thymus, the first attack may not produce death or there may never be a fatal attack. The most important and characteristic symptom of an acute attack is dyspnea. It may be continuous or intermittent. It may be characterized only by labored respiration or by the most intense choking spell. Between attacks respirations may be perfectly normal. It may be accompanied by an inspiratory stridor and in extreme cases by an expiratory stridor as well. The paroxysms may occur without any apparent cause or may follow a crying spell or nursing. Very often the attack is ushered in by convulsions. Extension of the head or placing the child on its back usually increases the severity of the symptoms, aiding mechanically the obstruction by diminishing the thoracic inlet.

In the more or less latent forms of hyperplasia the symptoms are rather vague. These are the cases which are often seen by the general practitioner. If correctly diagnosed, the infant may be saved from an acute attack and sudden death. While the symptoms are vague still they point in a definite direction if properly interpreted. Usually the child is undernourished and in poor general condition, very often suffering from some vague respiratory trouble. The history reveals the fact that since birth the infant often breathes rapidly or noisily after nursing or crying. Any of these symptoms should arouse suspicion in the mind of the attending physician. The diagnosis may be made complete by percussing out the borders of the thymus and confirmation by the X ray.

The condition must be differentiated chiefly from all other causes of dyspnea and obstructed breathing, the most common conditions being laryngeal diphtheria, catarrhal spasm of the larynx, foreign body, retropharyngeal abscess, enlarged bronchial lymph nodes, congenital laryngeal stridor and diseases of the heart and lungs.

Cases of thymic enlargement showing any symptoms should be treated by means of the X ray. The influence of this process upon lymphoid structure in general and the thymus in particular, has been proved beyond the possibility of a doubt.

W. W., a white boy, aged five months, whose family history is negative, was the first child born to a mother seventeen years of age. Delivery was normal. He has never had any acute illness but has always been difficult to feed. The mother's milk was insufficient and the baby did very poorly on bottle mixtures. About one month before its last illness it had been put to the breast of the mother's sister and gained very rapidly. Since birth the mother noticed that the breathing was noisy at times and rather labored, more marked after nursing or crying. These attacks were always of short duration and were never considered seriously by the mother. On one occasion he had a choking spell and was slightly cyanotic. Between these attacks the mother stated that the child was apparently normal but undernourished.

On February 23, 1923, the child had a convulsion at 1 a. m., lasting about five minutes at which time I was called. When I arrived the convulsion was over but the breathing was short and noisy. The temperature was 105°, the skin a grayish blue color. The anterior fontanelle was normal in size and soft. The nasal passages seemed clear but with slight mucous discharge. The throat was not red (however, smears and cultures were taken). The chest was well formed, the heart and lungs clear so far as I could determine. The child was placed in a hastily prepared steam tent. The breathing became easier and the skin assumed a more healthy color. About 5 p. m. the mother reported that the child had been comfortable all day. At 7 p. m. the same day it had a second convulsion which lasted only a few minutes. Afterward the breathing became very difficult with a marked inspiratory stridor. Under steam it failed to respond as before. The culture was negative for diphtheria and Dr. J. J. Hompes was called in consultation. The breathing again became easier and when we left the house the child seemed much better. About 10 p. m. the mother called to tell me that the child had suddenly died.

Post mortem revealed nothing abnormal except a large thymus gland weighing 18.3 grams.

MALNUTRITION IN CHILDREN OF PRE-SCHOOL AGE.*

W. O. Colburn, M. D., Lincoln, Nebr.

The term malnutrition has been familiarized by the laity in the past 3 or 4 years, and they accept it to mean a nutritional disturbance measured by the scales and a yard stick, and checked up with a table of standard weights and measurements. Realizing that nature does not work along the lines of mechanical accuracy, and that no two persons are just the same, we must broaden the line of averages to take care of the normals, and so Holt and others have suggested a standard of normal nutrition which varies 10% over and 10% under this average weight line, at the same time admitting exceptions to such a rule in that some normals may be outside these lines, and some abnormals within these boundaries. Again, malnutrition to the laity has been centered about the school age child, and every effort is being made to correct a condition that had its beginning back in infancy with no abatement, but on the contrary has become progressively worse until a halt is called at the door of our public schools. One is forced to admit that this propaganda as carried out in the various public schools has done a vast amount of good, and is only the beginni of what will be done. Rational methods now will be irrational later on but it is all toward an end.

---

*Read at the Lancaster County Medical Society, Jan. 20, 1923.

The purpose of this paper is in reality a spirit of cooperation to urge the medical profession to do all in its power to see that no cases of malnutrition reach the age of five years. A consideration of etiological factors from birth up to the age of five year's will be attempted in this paper.

1. Prematurity and inherited constitution. Cook, in a study of seventy-seven premature infants, found that hemorrhage, nephritis, toxemia, syphilis, heart disease, tuberculosis, alcoholism and neurotic conditions in the mothers, constituted the chief causative factors. The average weight was 4 pounds 9½ ounces. Such a beginning in life results in a high mortality or a state of malnutrition that may never be entirely corrected. The same applies to a full term infant born with a maternal history of syphilis or tuberculosis.

2. Lack of breast milk. The only natural food for the infant, during the first year at least, is the mother's milk. Contraindications to breast feeding are rapidly growing less every day. Not only the baby's but the mother's health improves under this regime. When some doctors, nurses, grandmothers and neighbors cease to advise special diets and so called galactogogues and permit the mother to live in her usual way, increasing her daily water intake and concentrate these wasted energies on regularity of feedings and a more careful observation of the weight curve, then and not until then will we see fewer babies deprived of natural feeding.

3. Faulty feeding. This is a broad heading including insufficient food, overfeeding, improper mixtures and irregularities of feeding. Digestive disturbances of various kinds may result from these conditions. A perfect metabolism is almost foremost in the list of necessities for fighting malnutrition.

4. Infectious diseases. These are common in childhood and result in various digestive disturbances and ultimately in marked nutritional changes. Complications such as tonsillar infections are frequent, leading to hypertrophied, infected tonsils, adenoids, otitis media, broncho-pneumonia and pyelitis, and, in some instances, endocarditis resulting in a permanently impaired heart.

TREATMENT.

In considering this phase of the subject it might be well to state that we are considering the first 5 years of life, and for convenience we will divide the patients into two classes:

1. Infants up to 18 months.
2. Children 18 months to 5 years.

1. Infants up to 18 months. Great progress has been made in the care of babies. They are carefully weighed, regularly fed and bathed. "Better babies weeks" are being conducted in every city, town and hamlet in the country. Many household magazines carry a babies' page. The Children's Bureau of Washington sends out an excellent bulletin on the care of babies. Our own state publishes a similar bulletin, which is placed in the hands of every new mother. With all this publicity, the mother has frequently acquired more safe knowledge along these lines than many physicians. The average baby is getting better care the first year of life than ever before and the mortality rate is much less than 10 years ago. However, before passing to the second class I wish to make brief mention of a few fundamentals in this class. The baby should have breast milk for its first 6 months if possible, and should be regularly fed upon a 3 or 4 hour schedule. Practically speaking, milk should be the only article of diet up to the age of 6 months. At the age of 6 months, whether breast or artificially fed, the infant should have a varied diet. Cereals may be tried first, and a little later vegetables should be added. One quart of milk (4% fat) a day should be the limit during the first 18 months of life. Manifestations of rickets are prevalent in most children after 1 year and a great amount of research work and study has and is being done to prevent this. It is now believed that cod liver oil is a specific and should be given to every baby from 6 months to a year.

Sunshine is also considered a great factor in the prevention of this disease and pediatricians are advising heliotherapy, or sunbaths for babies 6 months old. In the temperate zone, where the cooler months outnumber the warmer ones, it is believed that the sun baths faithfully given throughout the summer season and well into the autumn; may do much to lessen respiratory infections.

Parents try to evade diseases by giving physics, spraying the nose and throat with strong antiseptic solutions, keeping the children in hot, poorly ventilated houses, instead of building up a resistance to disease by outdoor air and sunshine.

2. Children 18 months to 5 years. At 18 months the baby is walking; it is then that the father, mother and entire family, begin to feel that the child is able to take care of itself. It is the age when he craves sweets and insists on the many things that are not good for him and gradually the family yields to anything to satisfy the wonderful fast developing little mind, until, by the age of 2 years, these little ones are eating almost continuously. Parents are more interested in the mental development and the so called cuteness of the child than they are in its physical development. The results are that we soon have a child whose resistance is lowered, and he succumbs to disease and soon displays the marks of malnutrition. It is in this class that we have most of the infectious and contagious diseases. Frequently parents believe that every child must have measles, chicken pox, whooping cough, etc., and they proceed to expose them and get it over with, and they are careless regarding the exposure of other children. We must cultivate a community conscience along these lines. Each mother and father in the community must not only take every precaution against the spread of disease among the members of their own family, but do everything possible to prevent the spread of infection to other families. Great progress is being made in preventive medicine, and we are on the verge of being able to prevent most of the contagious diseases. Small pox is prevented by vaccination and every baby should be vaccinated at 6 months. Diphtheria is preventable by the use of the Shick test, and if positive, the patient may be immunized by toxin-antitoxin. Measles, according to recent experiments will soon join this same class, and thus one may see the dread of contagious diseases passing by.

A careful medical examination may disclose naso-pharyngeal obstruction, carious teeth, sinus disease or cardiac disease. The X ray may show a bronchial adenopathy, tuberculous or otherwise; it may assist in the diagnosis of disease of the alimentary tract. An examination of the urine may reveal a pyelitis or a nephritis. An examination of the feces for intestinal parasites should be done in some instances. Blood examinations are frequently valuable and should be run as a routine. Individualizing these cases will result in greater progress in the eradication of malnutrition.

Sleeping. "Early to bed and early to rise, makes a man healthy, wealthy and wise," is surely a true saying. Many a child's health is ruined by dragging him to picture shows and social gatherings that keep him up till midnight. Children up to the age of 5 years should be in bed by 7:00 P. M. and up at 7:00 A. M. The child should be forced into the open air before breakfast for at least 15 to 30 minutes, and he should have sufficient time to eat his breakfast without hurrying. After 18 months 3 meals a day are sufficient, and a pint to a pint and a half of milk a day is enough, provided a variety of other foods is supplied. Coffee should not be permitted as a part of his diet. Water should be taken freely between meals—at least 4 glasses daily. Gymnastic exercises may be indulged in moderately for the purpose of correcting wrong postural habits and to establish correct breathing. Measured feeding, or the so called caloric method of feeding for the older child is commendable for the anorexia type. This method has done more than anything else to make successful infant feeding and it promises much for the child of older years. A certain type of malnourished child will be almost impossible to feed, if you force the child to eat he will vomit, if you luckily strike upon a plan that seems to be successful, in a week or ten days he tires of it. It will be necessary for you to be resourceful in presenting many new ideas to this type of child in order to decrease his underweight. No doubt back of this condition lie faulty home conditions. Early discipline beginning in infancy is essential and a word on this subject should be a part of all bulletins on the care of the baby that are being presented to the mothers by the state and by our government.

CONCLUSION.

Malnutrition in most instances can be prevented and the physician is responsible in many cases for its occurrence. As physicians we are good at taking care of the acutely ill child, but we are exceedingly deficient in our advice to the parents for the apparently well child. By our lack of interest, we encourage the government, the state and the city to do the things that can be done better by the physician himself.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D., Editor, Madison, Neb.
R. B. Adams, M. D., Associate Editor, Lincoln, Neb.
A. S. Erixon, Business Manager
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.
F. A. Long, Chairman Madison
W. O. Bridges Omaha
B. F. Bailey Lincoln
R. B. Adams, Ex officio Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII June, 1923 No. 6

THE LINCOLN MEETING

Perhaps never before in the history of our Nebraska State Medical Association was there noted more enthusiastic and determined constructive thought than during our last meeting in Lincoln. The tremendous latent power we have as a society of men was no doubt appreciated by many, as demonstrated by the papers read, subjects discussed and the type of men present. The society of medicine seemed on the eve of a most significant awakening; numerous members becoming cognizant of the fact that open and honest principles of the society of medicine are the foundation for the continued success of the science and the art of medicine. There was less discord than ever, and more frank discussion in and out of the assembly room, on the ways and means of elevating medicine to the height it should have in the public eye. President Bailey deserves no little credit for it; and the new president, Morris Nielsen, does not lack courage.

A most significant feature of the meeting, and perhaps the first of its kind, was the presence of a man well trained in the psychology of mental attraction, a teacher of economics in the University of Wisconsin. Professor Gardner emphasized the fact that the public should know more about the principles and the methods of the practice of medicine; that medical society owed such information to general society, and that this lack of knowledge by the masses indicated, (1) a lack of proper publicity of fundamental medicine by medical society, and (2) the predomination of mediocre mentality in the masses.

Our problem, therefore, is a difficult one because not only must we try to educate the public along lines of human biology, but also must keep in mind that the greater proportion of the human race distrusts and dislikes intelligence, mediocrity preferring mediocrity. The next few years will determine the future of medicine, relative to its control. In that time we must determine whether we are the dictators of our future or must weakly give up to state control. We can all rest assured the cults will never be controlled. they are organized and have set an example. —C. A. Roeder.

PROFITEERING IN MEDICINE.

"The laborer is worthy of his hire." "All the traffic will bear." These and similar expressions, are in the air today. The dominant thought in the mind of everyone who has anything to sell, is to get the highest possible price for it. This is human (very human) nature. But what has this to do with the medical profession of Nebraska?

The ambition of a large per cent of the doctors, and especially of the younger men in the profession, is to get into a city, and take up a specialty. Regular hours, absence of nerve straining anxieties over critical cases, and last, but not least, more of the coin of the realm. The human body is being parcelled out to a wonderful degree.

The argument is, that owing to the wonderful results of research work, and advances in knowledge in recent years, it is impossible for one mind to grasp it all. This argument looks reasonable, but there is another side to the picture. The great mass of the common people who suffer, have not the price to pay, and they do not like the idea of submerging their manhood, and becoming charity patients. The result is despair, discontent, anarchy. We speak of the cursed system of "caste" in the Old World,—Are we not drifting to a material caste system? Would it be accounted treason to express a belief that if a change is not soon manifest, it will not be ten years before some legislature will enact laws establishing maximum fees for our work?

And what is the remedy—not all the traffic will bear, but think of the other fellow, and not force him to feel that he is a dependent. Cut some of those big fees in two. They are dangerous for the future of medicine. While some of us are overcharging, the people are getting discontented. Don't grumble over the profiteering on sugar. The war is over. Get back to a reasonable basis, or we will face what most of us dread—State Medicine. Have a clear conscience, and live longer. If this be treason, make the most of it.

—M. L. Hildreth.

THE RELATION OF THE DOCTOR TO THE PUBLIC.

The question is often asked, "What has become of the old family practitioner?" We members of the medical profession can easily answer that when we look over the present graduates of the medical colleges and see them coming out well trained to do general work and still recognize cases that come within the province of men who might be called specialists. I believe that from these men the patient is getting a higher degree of service than he was from the old style doctor who we all loved and respected so highly. The present day physician is not getting as close to his patient as the old physician did. The patient does not have that love, does not honor and respect him as much, and most certainly does not obey his dictates as he did so faithfully in times past. We might say, "Not what has become of the old family practitioner, but what has become of the old style patient!"

There is a growing unrest among the laymen, a growing feeling of dissatisfaction with things medical and an increasing demand for a service which we as medical men are not delivering.

Since the war, as a result of the education of many laymen with regard to the importance of general physical examination, proper system of records of cases, and the newer scientific treatment of diseases, many of these young men who were under that sort of care are demanding the same from the physician today.

During the flu epidemic, thousands of people came in contact with the medical profession under surroundings that were not the best and came to demand more of the profession and the hospital than ever before. I believe these two things have had more to do with the present unrest among the laymen than anything else. Another fact which should be considered is the growing prevalence of cults that advertise their goods far and wide and do everything in their power to discredit the work of the regular practitioner.

The pathetic ignorance of the average layman with regard to the ills of the human body is well known to all of you. They are beginning to realize, however, that disease can be prevented and in many cases cured, and they are looking to the medical profession for light and leadership. I was convinced of this by talking with a man who has made a special survey to get the layman's point of view. This gentleman in the past three years, has recorded eight thousand conversations with various laymen, physicians and irregular practitioners, from the highest social leader to the bum on the street. He concludes there is a growing demand, a challenge if you wish to put it that way, to the medical profession to meet this situation. He reports a conversation which he had with the editor of the New York Times regarding his attitude; the substance of which was as follows:

"We are supplying the people in New York with some medical knowledge, with the column that Dr. Copeland conducts. In Chicago they are doing the same with Dr. Evans' column. But if there is a medical problem that I want advice upon I know not where to go for it. I can not go to the best men in the profession for they are surrounded by their code of ethics which prevents them from talking. If it is an engineering problem I can get the opinion of the best engineer in New York; if it is a legal problem I do not hesitate to call upon the best lawyer; but, if it is a medical problem I do not know where to go. The Medical Society has no committee on publicity or education that I can consult. Consequently, newspaper accounts of things medical are either more or less garbled as a result of the reporter's view point or are given by men who are not representative of the higher type of medical men."

"When I stop to think of the wonderful opportunity the medical profession has and the wonderful influence that might be used, if they would use it properly, I am surprised that they sit back and surround themselves with their code of ethics and allow the poor layman to grope on believing whatever any quack will tell him."

The situation is becoming more or less acute in many sections of the country as for example California. The medical profession there has had to subscribe a quarter of a million dollars and work night and day, to prevent anti-vaccination bills, bills to license chiropractors, etc., that are being brought before the legislature by irregular practitioners. On their own initiative the Medical Society has organized a League for the Conservation of Health. They realized that there was a common danger and a common debt and they threw aside personal differences and jealousies, carried the battle into the camps of the irregulars and won.

We hear very much these days about Socialistic or State Medicine, Committees for Child Hygiene and Pre-natal Care, Group Clinics, etc., all having for their object, although in some instances it may be misdirected, the public good. In most instances these movements have emanated from the laymen and to my mind it is only the handwriting upon the wall. It is time for the profession to get its house in order and fulfill its unselfish duty in this great country of ours.

The American Medical Association is beginning to realize this is essential in the new publication Hygiea which it has brought out for the education of the layman. Our State Association should also take cognizance of this situation and should have a committee appointed to edit the reports of the State Meetings and give the layman anything coming from that meeting that would advance his education on preventive medicine, the control and cure of diseases. Our local county society should have a similar committee appointed to cooperate with the editors of the various newspapers, giving to them from time to time articles on preventive medicine, vaccination, control of infectious diseases, early recognition of cancer, etc., and should edit and supervise reports of medical meetings that are published in daily papers. They should act as a Board of Censorship. I am assured from my conversation with newspaper men that, "This would be welcome" on the reports of cases, accidents, etc., as newspapers want constant news, so that if the thing is to go into the newspaper it will not go in a garbled way as it has in the past, but go in carefully written with the idea of conveying the news and at the same time give real information to the reader.

The hospital must consider itself an educational institution and must get away from the isolation of the past. The hospital has a duty to the profession. Its greatest duty is to the patient, but it also has a duty to the state and city in which it does its work. Every patient going into a hospital should come away from that hospital with a knowledge of the achievements of medicine and surgery of the present day, and have a clear conception of the function of a hospital. They should be made to realize that the hospital of the present day is not a place of last resort but is simply an efficient machine for the care of the sick; that the hospital is equipped as no home can be for this work, and by making use of this equipment their convalescence can be shortened from 25 to 50 percent.

The individual doctor has a duty. First to his patient, and second to society. To his patient he must give the highest degree of service, and that degree of service, as Dr. Steiner has recently said, should be of such high degree that when the patient pays his bill he will still have to thank you. If the doctor will just add three minutes to his call and devote that time to explaining the causation of the disease from which the patient is suffering, the advance that has been made in the treatment of it, reasons for the line of treatment, he will be doing a great good.

Another duty that he can perform is to tell the patient how a doctor is made. The long hard work that is necessary, and compare it with a short term of the average quack, and he should teach him how to choose his doctor and not depend, as he has in the past, on personality against professional ability. He should tell him why a regular practitioner has a right to do certain things and an irregular practitioner should not have that right. He, too, can tell his patient about the medical side of vivisection, vaccination, control of infectious diseases, the early signs of cancer, the use of the X ray, etc., so that the patient when he leaves his care, leaves it not only with a well directed line of treatment but pursues it with some ideas that may relieve his suffering in the future and prolong his life.

Conclusion. The time has come when the

medical profession can and must get away from the jealous bickerings of the past; must realize that ninty-nine doctors out of one hundred are probably doing the best they can with the material with which they have to work.

They must realize that there are men who are essentially honest and sincere and must give their fellow practitioners credit for this.

They must all get together for the common good of the profession and society, put their shoulders to the wheel and do their full duty.

For the last analysis; when we go out of this life it is not the number of cases we have seen or the amount of money we have saved, but the good we have done our fellow men, to make good thoughts and kind rememberances live after us.

UNIVERSITY OF NEBRASKA POSTGRADUATE COURSE

The University of Nebraska College of Medicine announces the Fourth Annual Postgraduate Course for Practitioners to be given at the University Hospital beginning Monday, June 11, and continuing until Saturday, June 23. The course will consist of an intensive review of the recent advances in medicine and surgery. Practical demonstrations will be given in laboratory, clinics and ward walks. One hour each day will be devoted to round table discussions of the problems of the general practitioner.

This course offers a brief and thoroughly intensive review and is designed to serve physicians who desire to study clinical cases at close range and to keep abreast of recent advances in medicine. The fee for the course is $30.00.

Note: Meals may be secured at the Hospital Cafeteria at moderate prices. Rooms may be obtained in the immediate vicinity of the Hospital.

THE SOCIETIES

The **Sioux Valley Medical Association** will hold its midsummer session at Sioux Falls, S. D., July 12, 1923. This will be a one day session, but the local hospitals will present clinics the following day for those who wish to remain.

The **Nebraska Women's Medical Association** held its annual meeting in Lincoln during the convention of the State Medical Association. Dr. Emelia Brandt, Omaha, was elected president and Dr. Rose B. Wohl, Omaha, secretary-treasurer. The Women's Association will meet semi-annually, the next meeting to be held in Omaha the first week in October.

The **Nebraska Academy of Eye, Ear, Nose and Throat** held its annual meeting at the Lincoln Hotel on May 14th with 40 members present. Dr. Harold Gifford, Omaha, was re-elected president, Dr. S. E. Cook, Lincoln, elected vice-president and Dr. C. Rubendall, Omaha, secretary-treasurer.

The **Pawnee County Medical Society** held a meeting in April at the Pawnee Hospital. Papers were read by Drs. John Bennett and Earl Brooks of Lincoln.

The monthly meeting of the **Madison County Medical Society** was held at Newman Grove. The program was given by Drs. D. C. Sigworth, A. M. Sonneland and C. R. Mullong.

The semi-annual convention of the **Twelfth Councilor District Medical Society** was held at Alliance on April 30. The program was as follows: Suppurative Diseases of the Maxillary Antrum. Dr. L. E. Sleeper, Crawford; Blood Transfusion, Dr. E. J. Mitchell, Scottsbluff; and Diagnosis and Treatment of Certain Important Diseases of the Stomach, Dr. J. R. Arneill, Denver. A banquet was held at the Alliance Hotel in the evening.

NOTES ABOUT THE DOCTOR

Dr. Robt. L. Sands, formerly of Hubbel, has moved to Omaha.

Dr. F. S. Owens, Omaha, will return in June from a trip abroad.

Dr. W. R. Boyer, of Pawnee, has gone to Boston for a month's postgraduate work.

Dr. Perry Allerton, who has just returned from the Canal Zone, has located at Tilden.

Dr. C. Edward Sayre has been elected president of the recently organized Rifle Club at Norfolk.

Dr. O. D. Johnson, Kearney, was badly cut and bruised when his car was wrecked in a collision.

Drs. C. B. Coe and L. J. Kilian, of Wakefield, are planning on opening a hospital in their community in the near future.

Dr. M. J. Ford, Omaha, recently addressed the national convention of the Big Sisters of the United States in Washington, D. C.

Dr. and Mrs. James Patton, Omaha, have returned from a cruise to South America on a boat chartered by the American College of Surgeons.

Dr. C. D. Williams, of Genoa, suffered the loss of several teeth and was badly shaken up when his car struck a post in Columbus. which he could not see on account of the heavy rain.

NECROLOGICAL

Dr. George J. Haslam, a resident of Fremont for 34 years, died suddenly of heart disease in his office on April 24th, aged 65 years. Dr. Haslam was born in London, and studied medicine in the British Isles and on the continent.

Dr. Charles R. Snell, Tecumseh, a graduate of Creighton Medical College in 1907, died on May 8th.

Dr. E. S. Thompson, a veteran physician of Wisner, died at his home on April 27th, aged 40 years.

Dr. William D. Shields, Holdrege, died on April 25th after a long illness, aged 67 years. With the exception of two years, he had been practicing at Holdrege continually since 1887. Dr. Shields was the first president of the Republican Valley Medical Association.

THE MEDICAL STUDENT.*

John W. Shuman, M. D., F. A. C. P., Professor of Internal Medicine. A. U. B.
Beirut, Syria.

The student of medicine should be an attentive and systematic observer of all things pertaining to medicine from the time he is able intelligently to do so until powers over which he has no control decree otherwise. The student of medicine begins his work, unknowingly, very early in life. His early special training in medical college dwarfs or enlarges the man. Educators in medicine have recently realized this fully and so raised the standard of medical colleges, especially in the English speaking world, that when the student receives his degree of Doctor of Medicine, he feels his education is but begun. The men who have been most instrumental in bringing about such changes were individuals in whom the system under which they were educated did not kill their desire to gain or impart knowledge.

There is no need to go into too much detail concerning the past. Too much of its ill teaching remains; but I wish to point out that, just because a thing is said to be so and has been said to be so for ages, it is no sign that the thing is true. This is so of other things, but it is especially true of medicine. We all will agree that if Fulton and Wright had listened to their adversaries, water and air traffic would be very light today. If the antagonists of the bacterial origin of certain diseases had succeeded, diphtheria would still be claiming its victims. I met a doctor the other day who asserted that he "had recently seen a little girl develop a paralysis after the use of and due to, anti-diphtheritic serum." How absurd in this day and age! That doctor may have been an accident of birth, but I maintain his medical college education dwarfed him; he did not know that it is impossible to produce a paralysis with "anti-toxin." If he ever knew, he had forgotten, that paralysis is a frequent complication of diphtheria. If the advocates of surgical aseptic technic had not won out, pus would still be a thing to be praised instead of damned.

It is all very well for the mathematicians to tell us that $2 \times 2 = 4$; but it is for the thinking mind to recognize the number of units that are comprised in the numeral 4 before accepting the statement. The medical man who accepts time honored statements as the truth, the whole truth and nothing but the truth, is not a student in the strict sense of the word. He is a parrot. The teacher who insists upon such doctrine is a menace.

For many years, a "gold-crown" stuck on a dead tooth (especially where it could be seen) was much sought after by the patient and encouraged by the doctor of dental surgery, but not since "focal infection" was discovered to be associated with every such tooth. Dilatation of the cervix and spontaneous delivery for eclampsia was the method of procedure in vogue a few years ago until the Dublin Rotunda treatment, with its 80% less mortality, succeeded it. Tack-hammer surgery, (the briggling and fiddling type which has for its "indications for operation" the presence of an organ not altogether essential to life and a fee), which has been practiced especially during the past 25 years, (asepsis making it safer), and is still continuing, especially offers a big field for the attentive and systematic observer of medicine.

The bombastic and wise utterances, the shot-gun prescriptions, and the snap-shot diagnoses of the internist have in a measure been relegated to the shades, but it is up to the medical student further to clarify the pool. To do so he must be a seeker of the truth. He must legitimately question and then logically try to prove all moot questions, also many that seem to be settled. There is no lack of material for his work. It beckons him on every hand, challenging him, however, that in order to succeed, his way will be anything but soft.

TREATMENT OF PARESIS

Certain German investigators, having observed that patients with paresis tended to improve when they became ill with malaria, have been treating paresis by injecting malaria into the blood. The method is still under investigation in this country as well as in Europe and its effects cannot be stated with certainty, but there is some prospect that they may prove of value.—Hygeia.

---

*Delivered by request before the Students' Medical Club, of the A. U. B., Nov. 4, 1922.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, July, 1923. No. 7

CONTENTS

Page

The Present Status of the Treatment of Diabetes Mellitus, Arthur D. Dunn, M. D., 221

Focal Infection of Dental Origin and Principles Governing Its Removal, Wm. Lete Shearer, B. A., M. D., D. D. S., F. A. C. S., 225

A Report on Radium Therapy, E. J. Angle, M. D., and L. J. Owen, M. D., 236

Episiotomy and Its Repair, Wm. Shepherd, B. Sc., M. D., 240

Specific Hypersensitiveness or Allergy As a Common Cause of Illness, W. W. Duke, M. D., 241

55th Annual Convention of the Nebraska State Medical Association Held at Lincoln, May 15-17, 1923 247

In Memoriam 255

Page

EDITORIALS—

An Opportunity for Organized Effort 256

Getting in Closer Touch with the Public 257

Chronic Osteomyelitis 257

Creighton University College of Medicine Graduates and Hospital Assignments 1923 259

Class of 1923—University of Nebraska College of Medicine 259

Hospital Notes 259

The Societies 259

Notes About the Doctor 260

Necrological 260

Books Received 260

THE PRESENT STATUS OF THE TREATMENT OF DIABETES MELLITUS.*

Arthur D. Dunn, M. D., Omaha, Nebr.

In a paper read before the Nebraska State Medical Association two years ago,(1) I discussed the pathological physiology of diabetes, stressing the rational sparing of the pancreatic hormone as the main objective in diabetic therapy. To this end the conception of undernutrition advocated by Allen and Joslin was presented, with methods of desugarization by dietetic limitations and by fasting. The keeping of diabetic patients sugar-free on adequately limited and balanced diets was discussed and the importance of the education of the diabetic patient was emphasized. Even with the advent of insulin there is no immediate prospect of a form of therapy which will in any way displace the fundamental grounding of the patient in the dietetics of his disease as the most important thing in treatment. Hospitalization was advised, except under exceptional conditions, for complete study of the individual case, to desugarize, to establish the limits of tolerance, and finally to teach the patient the dietetics of his disease. Today, one might add the use of insulin as additional grounds for temporary hospitalization in selected cases.

Medicine is admittedly in a state of flux, but nowhere in the past two years has the turmoil been greater than anent our views of the treatment of diabetes mellitus. Up to 1914 high-protein, high-fat diets, without the controls used by their sponsors, Naunyn and von Noorden, prevailed. Carbohydrate was limited and protein and fats allowed ad libitum. Desugarization was often accomplished and maintained, but the incidence of coma was high. In 1918 Joslin(2) summarized the situation in the following words: "At the beginning of 1914 the outlook for diabetic patients was depressing. The statistics of the Massachusetts General Hospital showed that in the preceding sixteen years for each 100 diabetics admitted, 28 were discharged dead, a record which duplicated the experience of the hospital between 1824 and 1898." The present era in the treatment of diabetes may be said to have begun with Allen and Joslin and the method of undernutrition developed by them has, according to Joslin, added two years to the expectancy of the diabetic—a noteworthy achievement in itself. During the past three years the diabetic pot has been seething, and we have for consideration today in the treatment of diabetes (assuming that the older Naunyn-Noorden method is passe) the four following methods:

---

*Abstract of discussion given before the Nebraska State Medical Association, Lincoln, May 17th, 1923.

(1) The Joslin-Allen method of undernutrition.

(2) The Newburgh-Marsh low-carbohydrate, low-protein, high-fat diet.

(3) The Woodyatt "optimal" diet.

(4) Insulin.

It will be noted that undernutrition figures in practically all of the methods of treatment of diabetes in use today. Lusk(3) states: "The ingestion of a dietary deficient in calories, extending over three weeks, brought down the basal metabolism of well-nourished young men to the same extent as fasting might have been expected to accomplish,"—viz., to two-thirds of the normal. There is a biological adaptation to lowered energy intake, protecting the organism not only against losses of its protein, but also against losses of its body fat. In other words, by undernutrition the metabolic machine can be shifted at will to a lower gear. Therefore, the most effective treatment of diabetes is that which will maintain that optimal degree of undernutrition which will keep the organism working efficiently without wastage at a lowered metabolic rate, keep the urine sugar-free, prevent acidosis, inflict the minimum of discomfort on the patient through dietary restrictions and finally add the most time to his expectancy.

The Joslin-Allen method of undernutrition has been the generally accepted method of treatment for the last nine years. Under it, according to Joslin, a diabetic may look forward in fair security to from five to seven years of life; diabetic children live fully three times as long as formerly, and an individual with diabetes between 40 and 50 can look forward to completing his normal expectancy. The drawbacks and dangers of this method of treatment lie in its essential principle—undernutrition. Joslin has sensed this and has recently advocated desugarization by his "test" diets instead of by fasting—reserving the latter method for extreme cases. While loss of weight is to be desired in obese diabetics and is in some cases of paramount importance, yet in thin diabetics it cannot be considered advantageous because every kilo's loss entails a loss of 126 grams of body protein, 269 grams of fat and 15 grams of carbohydrate. Therefore, it is obvious that undernutrition may be fully as disastrous as overnutrition. Joslin maintains carbohydrate at the highest point of utilization, because in those countries in which the carbohydrate values in the diet are high, diabetes is mild; the diet of those diabetics who live longest, whether they show sugar or not, are those whose carbohydrate has never long been reduced to very low levels, and as yet few cases have been published who have lived outside of institutions upon very low carbohydrate and high fat diets and attained an average duration. In the Joslin-Allen method is to be seen a reaction against the abuses of the high-protein, high-fat diets of Naunyn and von Noorden. Sufficient protein to maintain a nitrogen balance, as much carbohydrate as the patient will safely tolerate, and sufficient fat to make up a low calorie maintenance constitutes the Joslin-Allen system of dietetic therapy.

With the disadvantages which may possibly accrue from undernutrition in mind, Newburgh and Marsh(4), in order to obtain a higher calorie content and to avoid actual or relative fasting and to obviate any possible glycosuria, advocated their low-protein (.66 gm. per kilo), low-carbohydrate, high-fat diets. They maintained that it is essential to keep the patient sugar-free and the calorie content high, and that if the patient is sugar-free, coma need not be feared, although the fat content be very high. Their diet conforms to the principle of undernutrition. The first diet furnishes one-half the requisite number of calories. Their standard diets are:

(1) 90 F — 14 C — 10 P — 1000 calories (to desugarize)
(2) 140 F — 15 to 20 C — 28 P — 1400 calories
(3) 170 F — 25 to 30 C — 30 to 40 P — 1800 calories

The objections to this diet are centered largely about the high fat content; that the fat is in excess of the safe fat-glucose ratio of 1.5 to 1, based theoretically on the experiments of Shaffer(5); that to turn a patient loose on this diet invites disaster from acidosis; that such a high fat diet palls on the patient, makes his illness unnecessarily burdensome, thus increasing the tendency to break diet; that by such low carbohydrate content the tendency would be to further decrease by disuse the ability to metabolize glucose, and finally, it tends to reduce the treatment of diabetes to a formulary when the disease demands the highest degree of individualization for its most successful treatment.

In August, 1921, Woodyatt(6) made a keen analysis of the problem in an article entitled "Objects and Methods of Diet Adjustment in Diabetes", set forth his optimal diets, and emphasized the importance of thinking of diabetes in terms of metabolism rather than in terms of diet. Carbohydrate, protein and fat are ingested as such, but they do not find their way into the tissues as such substances. From 100 grams of carbohydrate the body metabolizes approximately 100 grams of glucose; from 100 grams of protein 58 grams are metabolized as glucose, and about 46 grams as fatty acids; 100 grams of fat yield 10 grams of glucose coming from glycerol and 90 grams of fatty acids. Therefore, carbohydrate tolerance cannot be estimated from the carbohydrate ingested, but must be based on the total amount of glucose metabolized, no matter from what source it may be derived. The second fundamental principle involved in Woodyatt's conception is the ketogenic balance. It has long been known that a certain amount of glucose must be present in the fat metabolizing mixture if accumulation of B-hydroxybutyric acid, aceto-acetic acid and acetone is to be avoided. That "fat is burned in a carbohydrate flame" has become an aphorism. There is for any given individual at any given time, a definite ratio between the quantity of glucose oxidizing in the body and the maximum of ketogenic fatty acids that can be oxidized in the same time without the appearance of abnormal amounts of the acetone bodies. Basing his estimates on personal studies and on the work of Zeller, Lusk, and Shaffer, Woodyatt assumed for clinical purposes that the ratio of higher fatty acids to glucose, which, if exceeded, may lead to acidosis, is likely to be close to 1.5 to 1 (in gm.), although Wilder estimated the ratio at 2 : 1, and much higher ratios are involved in the Newburgh-Marsh diets. This ratio in the individual case is based on the computation of glucose from all sources, viz.: carbohydrate, proteins and the glucose fraction of fat, and on the sum total of higher fatty acids derived from the leucin, tyrosin and phenylalanin fragments of the protein molecule. Because proteins raise the basal metabolic rate through their specific dynamic action, their quantity must be fixed at an amount sufficient to maintain a nitrogen balance. A safe amount has been fixed in 1 gm. protein per kilogram of body weight by Woodyatt, Joslin and Allen agreeing, while Newburgh and Wilder place the safe minimum at .66 gm. per kilogram of body weight, except in children. It is, however, in his attitude to fasting that Woodyatt departs most widely from the generally accepted views. Metabolism does not cease with the stopping of food. Fasting men produce heat. Cetti, during the first four days of a fast, produced on the average 29 calories per kg. for a total of 1618 calories per day and catabolized 85.88 gm. of protein and 136.72 gm. of fat. If food is withheld, the body feeds from its stores. When fasting the body draws its food supply from endogenous instead of exogenous sources. Inasmuch as the glycogen supply is decidedly limited, especially in diabetics, chiefly fat and protein are catabolized. When the fat reserves run low, protein yields the difference in energy requirement. Therefore, if fat spares protein, it would be logical to feed the amount of fat normally consumed by the fasting individual, especially if that individual were an undernourished diabetic, in order to protect his fat reserves and prevent protein loss. If this be true, it is questionable whether a diabetic should ever be starved except to reduce obesity. The favorable results of Newburgh and Marsh, with their high fat diets, attest the value of an exogenous fat supply. As the curve of the exogenous food supply falls, the curve of the endogenous supply rises to meet it. The energy produced must come from one or the other of these sources, and it is as illogical to use the body's food reserves to meet current demands as it is for a corporation to use its reserves or capital to meet current expenses, when other and cheaper sources are available. According to Woodyatt, the patient should be placed at once upon a maintenance diet in which there is one gram of protein per kilo of bodyweight, and a glucose content from all sources sufficient to metabolize enough fat to give thirty calories per kilo of body weight; the F : G ratio should not be more than 1.5 : 1.

If, after several days of such a balanced maintenance diet, the patient failed to desugarize, the total G was somewhat further reduced in an effort to depreciate the basal metabolic rate. The advent of insulin, however, has obviated the necessity of reduction of the total G below that of a properly balanced maintenance diet. If, after the patient has been on a balanced maintenance diet for several days, glycosuria persists, the urinary glucose being practically constant, approximately one unit of insulin is administered for each gram of glucose excreted in the urine during the twenty-four hour period. The quantitative administration of the insulin is controlled by accurate quantitative urinalyses and by the qualitative examinations of single specimens to determine the time of administration. Occasional blood sugar estimates are made in order to avoid hypoglycemia, with its attendant train of disagreeable and dangerous symptoms.

INSULIN

It is not my province to discuss in detail this epoch-making discovery of the Toronto School of Physiologists, a subject which has been most ably handled in the paper given yesterday by Dr. LeRoy Crummer. I wish merely to cite two instances in which insulin has seemed to be the decisive factor in the management of critical post-operative cases and to show its effect in a very severe diabetic.

Case I. Mrs. J. C. B., referred by Dr. Joseph Bixby, of Geneva, Nebraska, a severe diabetic, 55 years old, was excreting an average of 32+ grams of glucose per diem on a constant diet of 98 total G. Fifteen units of insulin were administered immediately after breakfast, at 9 A. M., when the blood sugar registered .22%. Ten units more were given at 1 P. M., one hour after lunch. The blood sugar dropped to .16% at 2 P. M., and the urine passed an hour later was sugar-free. Figure I illustrates this experiment and shows graphically the power of insulin to lower blood sugar. Figure II shows the sharp rise of the glucose and water output on stopping insulin treatment, with the rapid drop of the curves to former levels on resumption of insulin treatment. The patient had been run on a constant diet of 86 G and a constant daily insulin dosage of 45 units for five days prior to stopping the insulin.

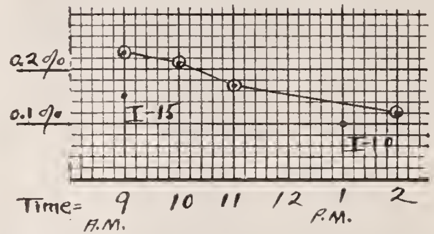


Figure I.

This figure shows the rapid drop in blood sugar after the injection of insulin on a constant diet. ☉ = blood sugar in tenths of one per cent. I = insulin in units.

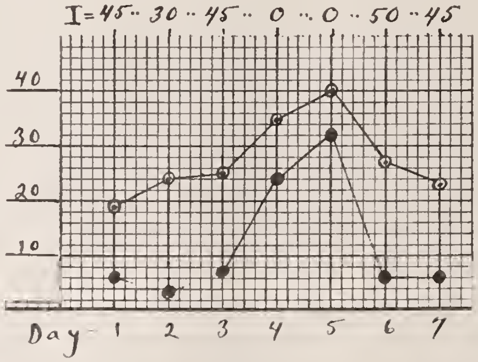


Figure II.

This figure shows marked increase of urinary sugar and water output on a constant diet with cessation of insulin administration, with return of curves to former levels on resumption of insulin treatment. Total glucose intake was 86 gms. per diem throughout the experiment. ☉ x 100 = cc. total urinary output. ● = total urinary sugar output in grams. I = insulin in units.

Case II. Mrs. W. A., a moderately obese woman of 41, referred by Dr. J. W. Thomas, of Nehawka, entered the hospital for a diabetes mellitus and metrorrhagia. The patient desugarized on a diet with a total glucose of 50, and was gradually raised to 120, remaining sugar-free until a severe uterine hemorrhage occurred, after which the tolerance fell sharply. Insulin was used to desugarize and as soon as the patient was sugar-free, hysterectomy was performed by Dr. Palmer Findley. Immediately following the operation sugar appeared in the urine—13.5 grams in twenty-four hours. The patient was put on 80 G, (fruit juices, etc.,) and allowed to consume her own fat. Sufficient insulin was administered to keep the patient approximately sugar-free. While acetone plus one was present several times, diacetic acid failed to appear during the post-operative period. It would seem that insulin was a material factor in turning what might easily have been a stormy, post-operative course into a simple, uneventful recovery.

Case III. I. J. D., age 59, physician, had been suffering from a mild diabetes for seven years, which had been controlled easily by diet. During the past year increased urinary frequency had been noted in the absence of glycosuria, and without increased quantity. He had been forced to get up every hour at night to urinate for two months prior to his entrance into the hospital. Following an attack of acute urinary retention, a residual urine of 150 to 200 cc. was found. There were no other symptoms of importance except that for four months the patient had been unable to walk two squares briskly on the level without precordial pain, which passed on resting.

The physical examination revealed a well developed, obese, elderly man (weight 240, height five feet, eleven inches.) Examination of the head, neck, lungs, abdomen and central nervous system was negative. The heart was not enlarged, and there was a rather rough systolic murmur heard over the entire precordium, which was loudest at the base, and which was transmitted toward the neck. The sounds were otherwise normal, except for a rather low-pitched aortic second sound and a split first sound at the apex.

The aortic area was not increased in breadth. The blood pressure was systolic 130, diastolic 80. Rectal examination showed a rather small, soft prostate. A cystoscopic examination by Dr. Edwin Davis showed a residual urine of 100 cc., enlargement of middle and right prostatic lobes, and a trabeculated bladder indicative of chronic obstruction. Except for an occasional pus cell, the examination of the urine was negative. The phenolsulphcnephthalein output was 80% in two hours, the twenty-four hour urinary output was 2000 cc., the urea nitrogen 15 mgm. per 100 cc. The patient remained sugar-free on a balanced maintenance diet based on a total G of 140. After twelve days' preparation with a permanent catheter, suitable diet, etc., the patient's condition was considered optimal for operative intervention. A one-stage, suprapublic prostatectomy was performed without undue trauma or shock. Twenty-four hours after operation the patient developed an acute dilatation of the stomach, with hemorrhages, which was refractory to treatment and compelled five days of almost complete starvation. On the fourth and fifth days, which were completely without food, the total sugar output was 3.4 and 13 gm. respectively. The blood sugar was .32%. At the end of the fifth day the condition of the patient was bad, when insulin and feeding were started. Desugarization occurred on the fifth day of insulin treatment, the total G for the five days having averaged 80 grams. The blood sugar dropped from .32% to .18% in the five days. Figure III shows the curves of insulin, total G for one week, and blood sugar for five days.

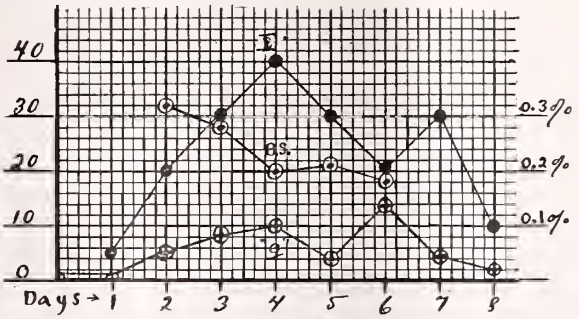


Figure III.

This figure is a graph of a phase in the metabolic history of Case III. ● = insulin in units; ⊕ x 10 = glucose intake from all source in grams. ⊙ = blood sugar in tenths of one per cent.

While the discovery of insulin has been one of the great achievements of the century in medical science, yet we must not be carried away by the romance and notoriety of it, and by our desire for an easy way out of a difficult disease. It has a definite place in the treatment of diabetes, but cannot replace dietetics and to use it without sound dietary procedure is to do harm and finally bring a most valuable remedial agent into undeserved disrepute. Its use should be restricted to cases of coma, to tide diabetics through such crises as necessary surgical interferences, and to those cases that cannot be kept sugar-free on an adequately balanced diet, containing sufficient calories to maintain health and furnish sufficient energy to perform necessary work.

BIBLIOGRAPHY

1. Dunn, A. D., Treatment of Diabetes, Nebr. M. J., 6, 297, Oct. 1921.

2. Joslin, E. P. Johns Hopkins Hospital Address, quoted in Oxford Loose Leaf Medicine, Oxford University Press, 1922.

3. Lusk, Graham, Physiological Reviews, 1, 523.

4. Newburgh, L. H., and Marsh, Phil L., The Use of a High Fat Diet in the Treatment of Diabetes Mellitus. Archives Int. Med. 26, 647, Dec. 1920. Ibid. 31, 455, April 1923.

5. Shaffer, Jour. Biological Chemistry 47, 433, 449, July, 1921.

6. Woodyatt, R. T., Objects and Methods of Diet Adjustment in Diabetes. Archives Int. Med. 26, 125, Aug. 1921.

808 Brandeis Theatre Building

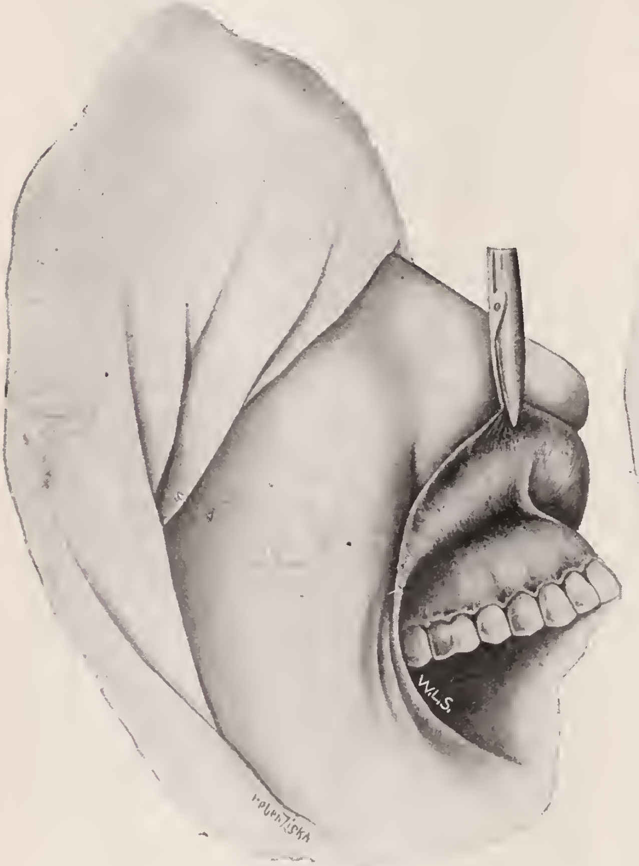
FOCAL INFECTION OF DENTAL ORIGIN AND PRINCIPLES GOVERNING ITS REMOVAL.*

Wm. Lete Shearer, B. A., M. D., D. D. S., F. A. C. S.,
Omaha Nebr.

In considering focal infection from the viewpoint of the oral surgeon, the following three hypotheses will be considered: 1. That it is accepted as axiomatic that the principles of focal infection apply to numerous disease conditions such as acute and chronic arthritis, certain acute and chronic nephritides, certain neuritides, myocarditis, endocarditis, myositis, certain gastric and duodenal ulcers, cholecystitis, etc. 2. That organisms with selective localization properties commonly reside in the diseased processes involving the

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.



Figs. 1, 2, 3, 4, illustrate the complete external alveolectomy.

Fig. 1. Diagramatic of the superior maxillary. Assuming that the pathology of the teeth and body of the jaw requires the removal of all the teeth.

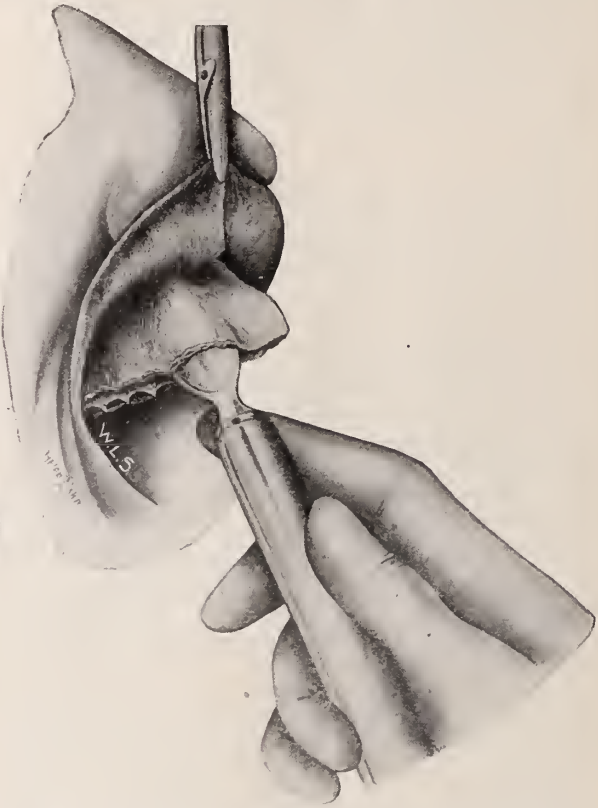


Fig. 2. Illustrates case after the removal of the teeth, the mucoperiosteum denuded from the bone and lifted upward and above the root ends of the teeth.

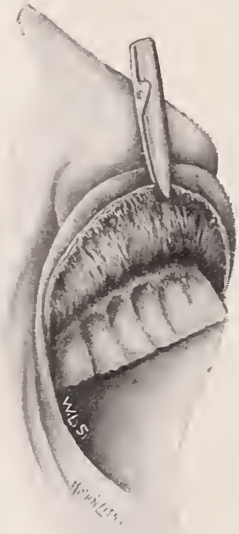


Fig. 3. The mucoperiosteum reflected up to the root ends of the teeth and the external alveolar plate along with the diseased tissue attended to under the eye. The lingual, buccal, gingival mucosa trimmed. No jagged bone edges are left.

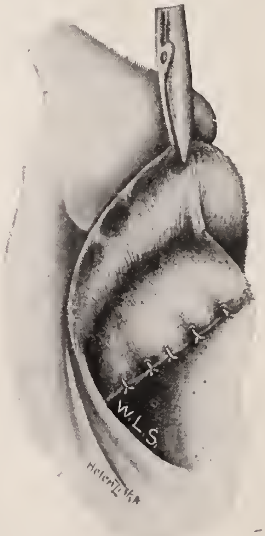
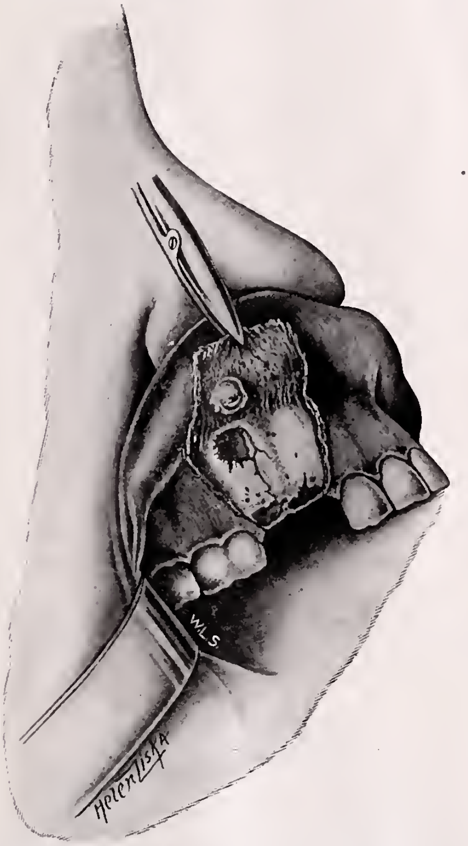


Fig. 4. The mucoperiosteum carried back into position and sutured with horsehair. I advise continuous horsehair suture in the hands of those experienced, either buttonhole or over and over stitch.

teeth and jaws. 3. That often the existence of such dental foci have been demonstrated and their removal decided upon. After adequate study of the general disease problem such surgical procedures must be instituted as will give assurance of the complete removal of the foci in question.

My discussion has to do merely with the diagnosis of the existence of such foci, with the estimation of the character and extent and with the proper methods for their removal. I wish, however, to emphasize in passing, the extreme importance of the general diagnostic problem involved. Much of the disrepute into which extensive dental removals has fallen is due to incomplete study of the patient's general disease problems. The same care should enter into the decision to remove a mouth infection as is accorded the decision for a major abdominal operation. An extensive removal of mouth infection should never be embarked upon without intensive study of the patient, including a complete physical examination and whatever laboratory tests that may possibly afford information of value.



Figs. 5, 6, 7, illustrate partial external alveolectomy.
Fig. 5, shows conditions of the bone often revealed after the flap is laid back, the granuloma attached to the mucoperiosteum. It is necessary in many instances to employ the knife in order to remove the diseased tissue.

During the progress of disease of the investing tissues of the teeth in the form of pus pockets along the side of the roots, or chronic alveolar abscesses there is a continuous inflammation of low degree and almost constant suppuration and the pus formed usually is itself undergoing putrefactive decomposition through the growth of the saprophytic organisms.

Foci of infection in the mouth are in the same causal relation to arthritis, endocarditis, nephritis, cholecystitis, etc., as are infected tonsils or chronic suppurations in any other site in the body, whatever variation in degree may possibly exist.

Focal infection or sepsis is, without any exception, the most prevalent infection operating in medicine and a most important and frequent cause and complication of many so-called medical diseases. Its ill effects are widespread and extend to all systems of the body.

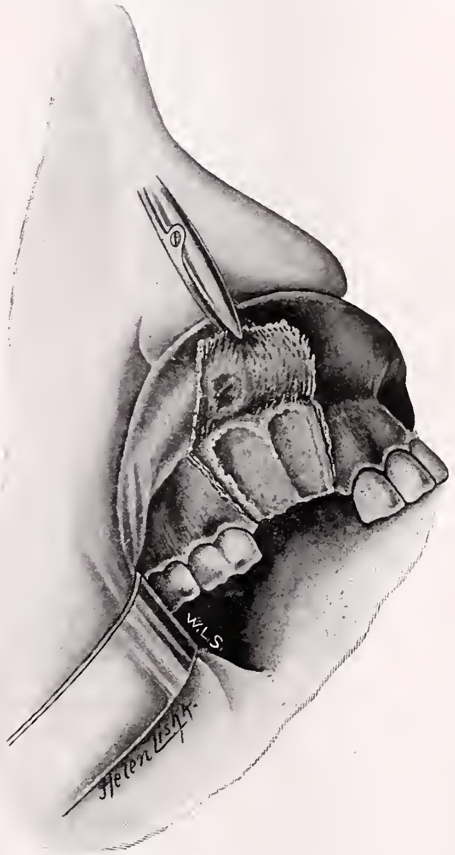


Fig. 6. Partial external alveolectomy ready to close.

The relations between these effects and the infection that causes them are constantly overlooked because the existence of the infection is itself overlooked. For one of the chief seats of that infection is in the mouth and the sepsis itself, when noted, is erroneously regarded as the result of various conditions of ill health with which it is associated, not as it really is, the important etiological factor.

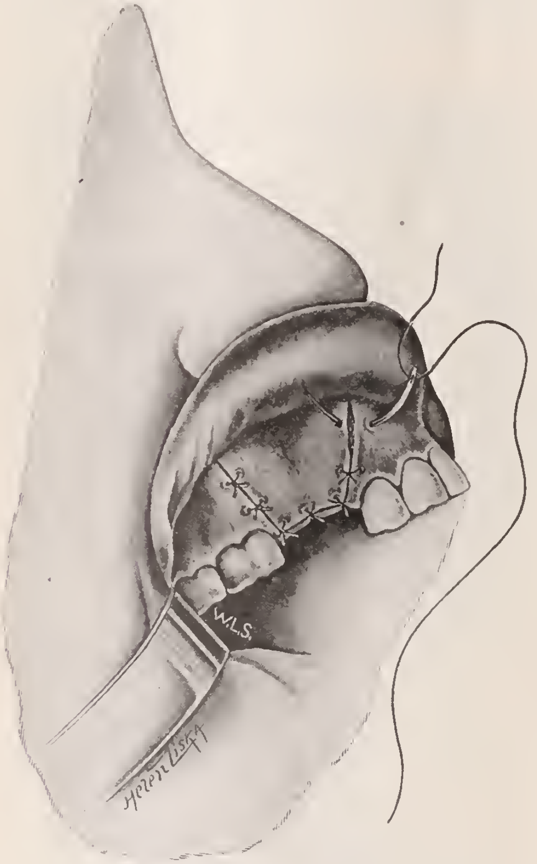


Fig. 7. Replacement of the mucoperiosteal flap into proper position.

The effects of sepsis are not the same in all classes any more than are the effects of septic infection in surgery or those of tuberculous infection in medicine. They affect sometimes one system and sometimes another, in different degrees, depending upon the individual susceptibility, just as a chronic tuberculous infection may in one case affect the glands of the neck, in another the joints, the lungs, the peritoneum, the meninges, and so on. Also at times it may affect all these systems.

The storm center in all dento-alveolar disease is pericemental membrane. This membrane is detached from the cementum by suppuration and is the important factor in establishing the chronicity so characteristic of mouth infection. As a result of infection, the cementoblasts which overlie the surface of the cementum within the pericemental membrane are also destroyed. These are the

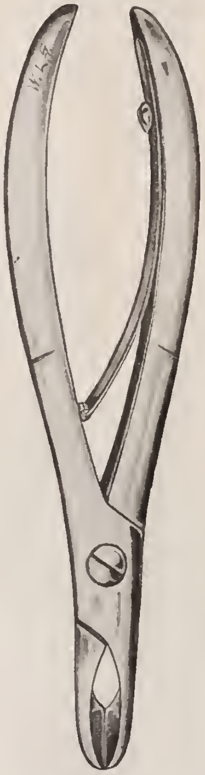


Fig. 8. Special rongeur forcep designed to better carry out certain steps of this class of surgery. Presented to the profession for what it is worth.

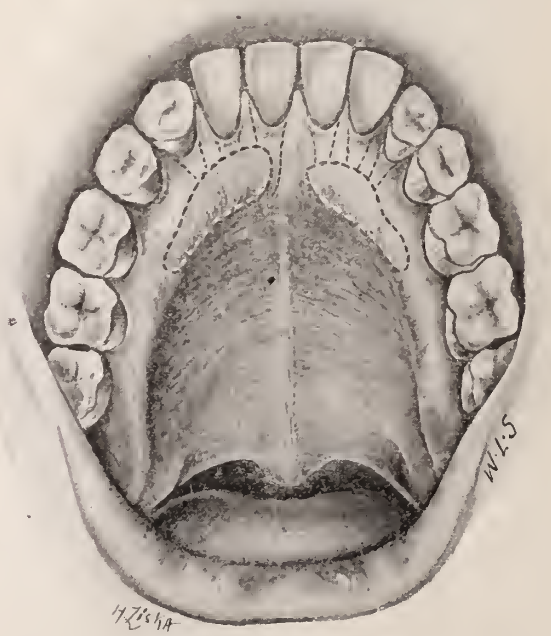


Fig. 9, 10, 11, 12. Illustrate different stages of the operation for the removal of imbedded and impacted teeth, lying in the roof of the palate, distally to the roots of the teeth.
Fig. 9. Diagramatic of imbedded cuspid.

only cells which can bring about the reattachment of that tissue to the tooth and the socket. With the death of these cells, the life and usefulness of the teeth are limited. Soon after detachment, the fibres of the pericemental membrane which formerly passed from the cementum of the tooth of the detached area to the alveolus, disappear, and a little later this bone to which these fibres were attached, is absorbed. Thus, in addition to the fact that the denuded cementum is dead, all of the specialized elements necessary to the connection of tooth root with adjacent bone are lost and a reattachment of this tissue to the cementum of the root can not take place. (In other words, the tooth has permanently lost contact with the alveolus). Therefore, pockets persist about such teeth and are subject to continuous reinfection. In many cases healing is only apparent and not a reality. While in the case of the chronic alveolar abscess the chronicity may be maintained by the dead pulp of the unfilled root canal or by the denuded cementum about the end of the root. If the cementum has been detached the condition is practically the same as the pus pocket which is open at the gingival line, so far as the continued chronicity is concerned, as there is no possibility of a reattachment. The presence of such a focus does not indicate that the person is suffering from systemic effects, but it is potentially dangerous. This is a question of the resistance of the tissues or of individual immunity.

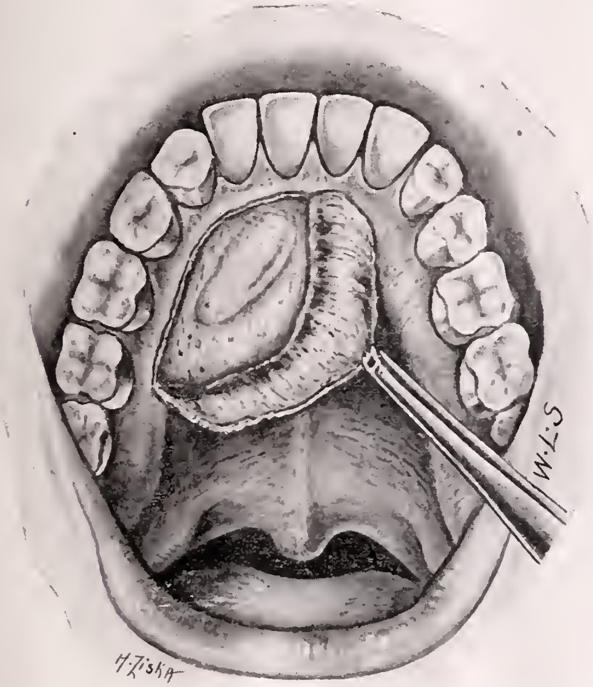


Fig. 10. First step in operation. Incision is made close to the teeth leaving just enough mucoperiosteum to suture to. This incision involves only the terminal branches of the descending palatine artery and thereby avoids excessive hemorrhage.

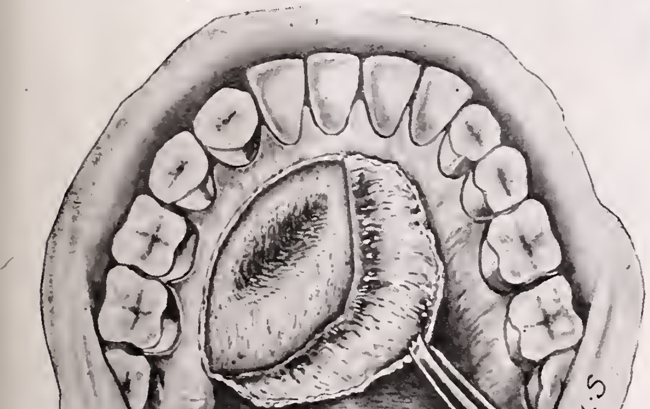


Fig. 11. Illustrates the condition of the bone trimmed and smoothed leaving no jagged edges after the removal of the teeth.

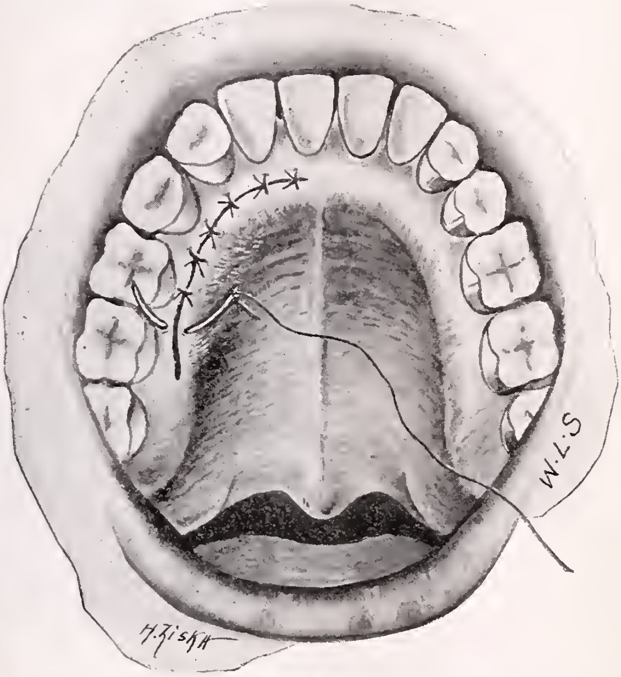
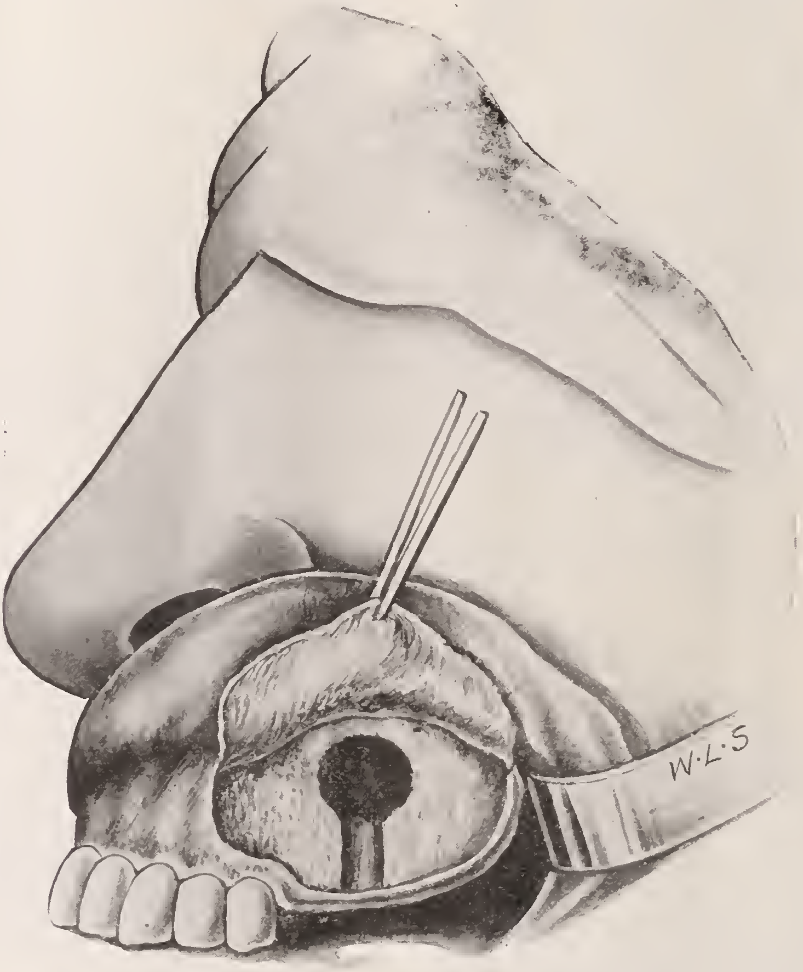


Fig. 12. Closing of the mucoperiosteal flap with horsehair. With this technic there is no depression in the palate and usually no sloughing.

On the other hand it should be remembered that the definite secondary lesions resulting from these foci are of such gradual onset that they are occasionally not recognized by the patient, and do not come to the attention of the physician until they have made such progress as to be incurable or at least, very resistant to treatment.

Theoretically this fact demands the eradication of the foci, for the protection of the health of all persons, whether apparently suffering or not. But teeth are useful and can not be sacrificed with the same sang-froid with which we delete tonsils. Therefore, we often feel that it is the part of wisdom to advise patients in good health to take a chance and hang on to necessary teeth, though these teeth may show evidence of indolent infection. This does not apply, however, to extensive infection involving many teeth and showing widespread destruction of the alveolar process. Nor does it apply to patients showing definite symptoms traceable to foci of infection.



Figs. 13, 14. Illustrate steps in method of approaching the maxillary sinus where there are one or more teeth removed. In this way an ocular observation of the maxillary sinus may be had. A small groove is chiseled in the body of the bone, which permits of drain plug. When the patient recovers there is scarcely an indication of an operation having been performed.

Any new procedures which tend to depart from the old, however inadequate the old may be, are not usually met with much enthusiasm; on the contrary, it is the rule that they are accepted slowly. It is not easy for men who have been doing things a certain way, teaching and advocating certain methods to renounce them, much less admit the fallacy in the things they have been teaching and doing. We are all prone to meet progress reluctantly, especially if it demands that we stop doing things in the manner in which we have been doing them and as we grow older we are likewise reluctant to take up the new even though we are able to see its application and its true advantages. This is all too human. (With apologies to Nietsche).

It is difficult to accept the obvious. We all see the trend of the times in preventive medicine, yet we do not accept and apply it in our daily practice. Not until it has been forced upon us by the truth of its application will we accept. So does habit of mind determine our attitude to mouth infection.

Focal infection as a cause of or a contributing factor to remote disease is an established fact. The careful work done by many throughout the country notably Billings, Rosenow, and co-workers, has proven this.

Less serious attention seems now to be given the teeth and jaws in their relationship to disease problems than was given a few years ago. Failures and disappointments in large numbers of cases probably is a reason for this attitude of inactivity on the part of many. Improper evaluation of the factors entering into the problem doubtlessly may be a cause for unhappy results.

Inadequate surgical technic in removing mouth pathology, (diseased bone contiguous to root ends of non-vital teeth, pericemental membrane, etc.,) is one of the great causes for failure to obtain decisive results. It is then incumbent upon us to change our methods of treating bone diseases of the jaws. The least the oral surgeon can do is to get rid of the disease. If he fails to do this, he had almost better not have worked at all. It would seem to me that the lantern demonstration which follows should establish this contention, the whole of which demonstration is to show what mouth disease is, how it may be recognized, and finally how it may be removed.

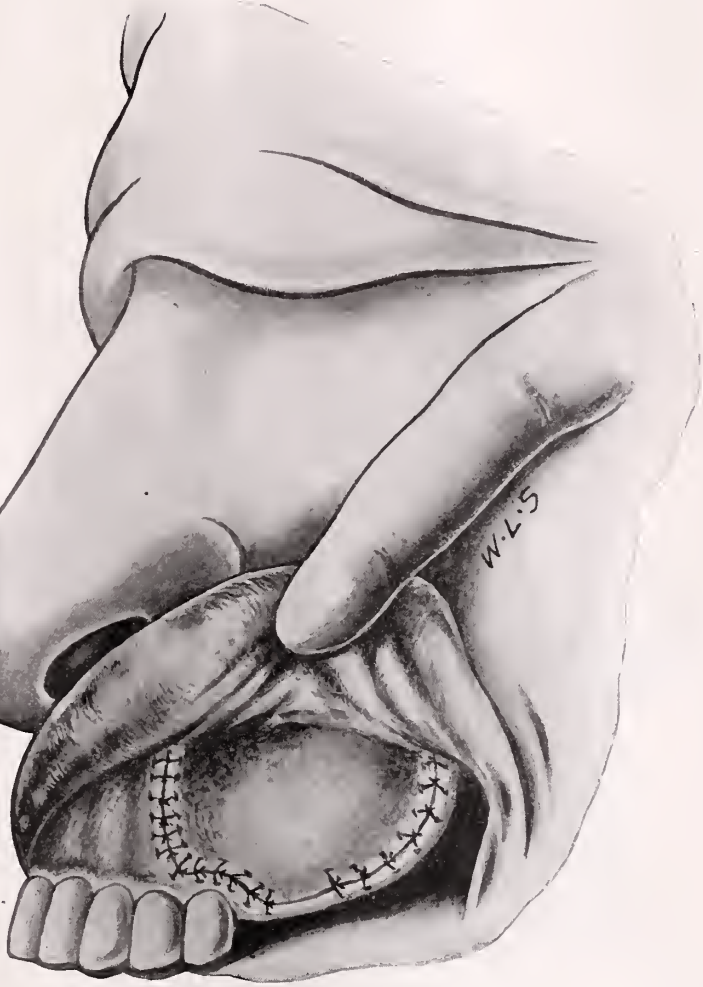


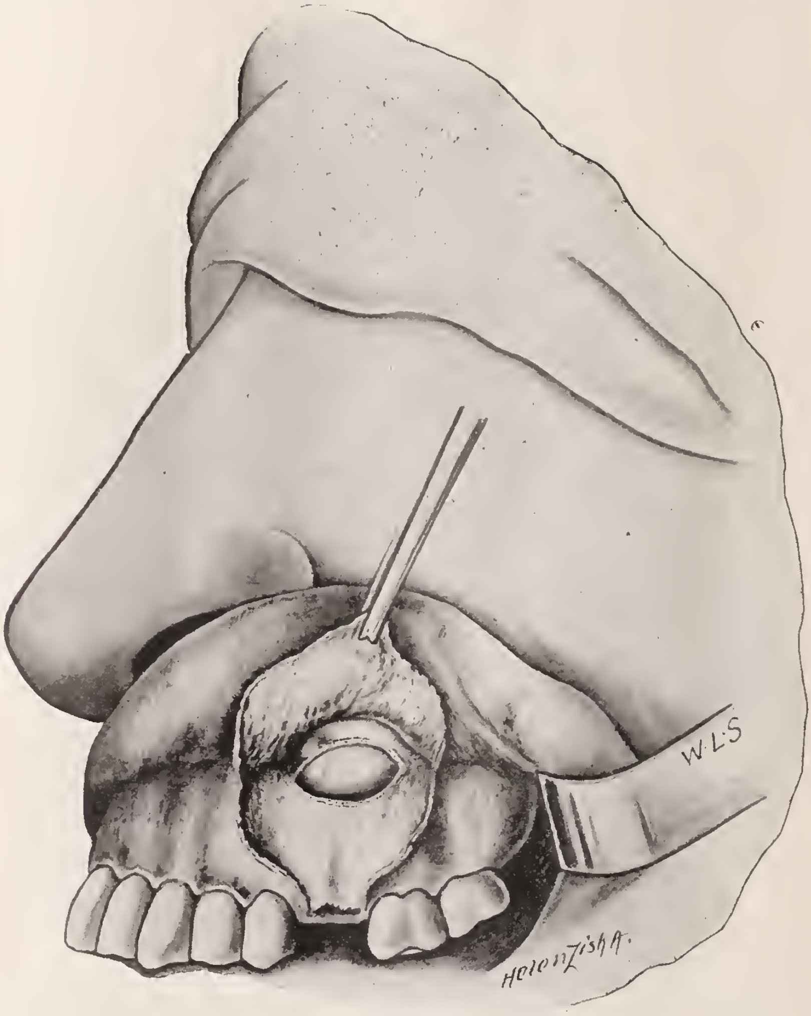
Fig. 14. Shows flap sutured back in place with interrupted horsehair, a few stitches omitted at the site of the drainage.

Anatomical problems.

The embryological development of the jaws and the subsequent growth of the jaws after birth is an intensely interesting study but can not be taken up in this paper other than as it pertains to the pathology of infection and to technic.

Suffice it to say that the alveolar process develops as the teeth develop and take their relative position in the jaws, and that when the teeth are lost or lose their function, resorption of the alveolar process wholly or in part, inevitably follows.

It may be of interest at this point to state that while the growing tooth germs are producing pressure which is transmitted to the cortical plates, the growth of the tissues within the mouth, the tongue and the associated organs are exciting pressure upon the lingual surfaces of the bone. The muscles attached to their surfaces transmit force to the bone through the periosteum, and the function of mastication, deglutition and respiration are acting upon them. All of these are mechanical stimuli to which the connective tissue cells respond. In all the process development the growth is the result of all the forces to which the bones are subjected, perfectly distributed through the substance of the bone by the agency of normal occlusion. Any lack of harmony in the proportion of these forces may allow the teeth to meet when they erupt outside of the normal influence of their cusps causing the beginning of mal-occlusion, (and possible subsequent disease.)



Figs. 15 and 16. Illustrate an operation designed to remove the bony floor of the maxillary sinus when diseased, such as a chronic osteomyelitis, leaving the mucous membrane intact.

Fig. 15. First step.

Peridental or pericemental membrane may be defined as that tissue which fills the space between the surface of the root and the bony wall of the alveolus and supports the gingivae. In a sense it is the most important tissue to the dentist, for upon it the usefulness of the teeth and their comfort to the individual is dependent. It makes no difference how perfect a crown may be, or how perfectly any damage which may have occurred to it may have been restored, unless the pericemental membrane is in healthy and fairly normal condition, the tooth will be temporarily useless and the individual would be much more comfortable without it.

The relation of disease at the root ends of teeth contiguous to the maxillary sinus is of paramount importance. Maxillary sinus disease caused by the infection from the teeth is more common than is usually recognized.

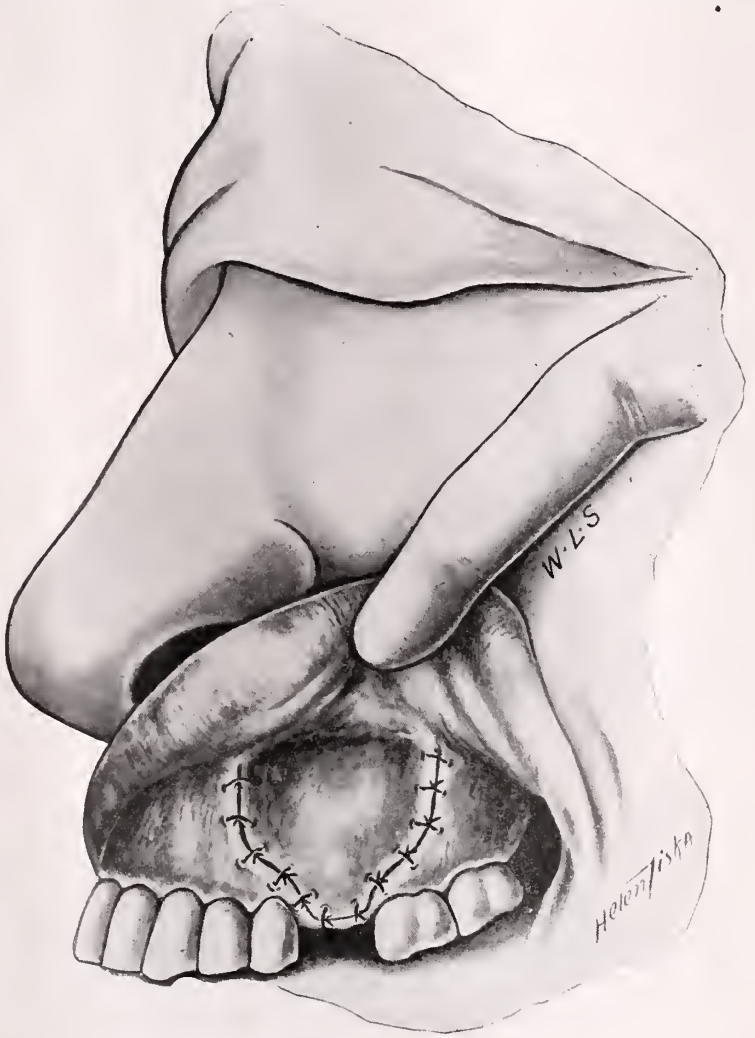


Fig. 16. Operation completed.

The diseased bone in proximity to the sinus is one of the important factors which should not be overlooked. Attacking sinus disease of dental origin through the nose will not afford satisfactory results. Properly managed there will not be a loss of teeth other than those which are a part of the disease.

The objective involved in the accomplishment of these principles may be summarized as follows:

Step 1. An occular observation of disease to be removed.

2. The certain removal of the infection.

3. The leaving of the tissue in the best possible condition, no jagged bone, infective granulation tissue, etc.

4. The least possible trauma to important tissues, blood and nerve supply, etc.

5. The collapse of the bone cavity as far as possible.

6. The daily irrigation of hot salt solution or one-half of one percent lysol solution. Most important are hot irrigations following all mouth surgery, the mouth harboring so many infective pathogenic, micro-organisms must of necessity require irrigation to keep the parts clean.

7. The anesthetic of choice in my hands is novocain by nerve blocking for the reason

that it affords ample time to give a careful, painstaking service with the cooperation of the patient, practically no shock, etc.

This class of surgery should be done in the hospital where it can be done in appreciation of those principles well understood by all surgeons. Yet it is difficult to sell this to the profession, to say nothing of the laity. Sterile gauze wrung out of hot water should always be used around the mucous membrane. Moreover, the hospital affords a better working out of the problem and a better evaluation of the disease of the jaws to the gross problem and greater certainty of effective after treatment.

Complicated problems.

Involvement of the floor of the maxillary sinus.

a. Mucous membrane perforated.

b. Mucous membrane not perforated.

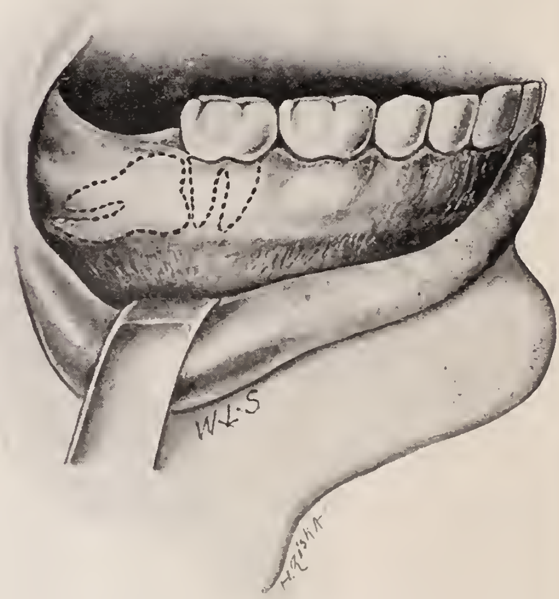
c. Granulations and diseased bone in proximity to sinus can be perfectly removed.

d. Neurological complications.

e. Cystic involvement of the jaws.

  1. Non-extensive.
  2. Extensive.

f. Ludwig's Angina.



Figs. 17, 18 and 19. Illustrate steps in the design of an operation for the removal of impacted and imbedded lower third molars.
Fig. 17. Diagramatic of imbedded tooth.

g. Necrosis following improper surgical technic. Severe Vincent's infection should always be ruled out. Many severely complicated cases have been reported as a result of this oversight.

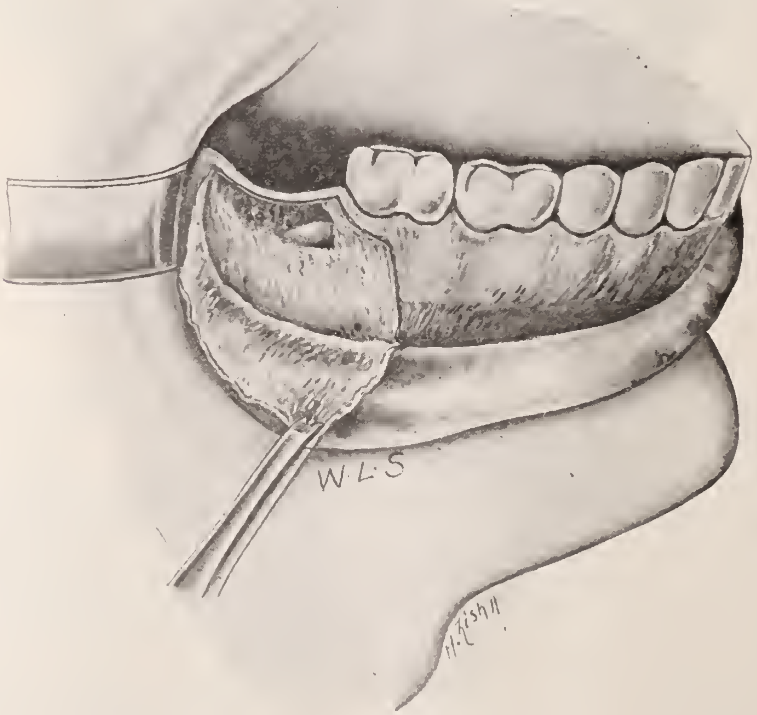


Fig. 18. First step in showing line of incision.

Imbedded and impacted molars.
Imbedded and impacted cuspids.
Restorations.

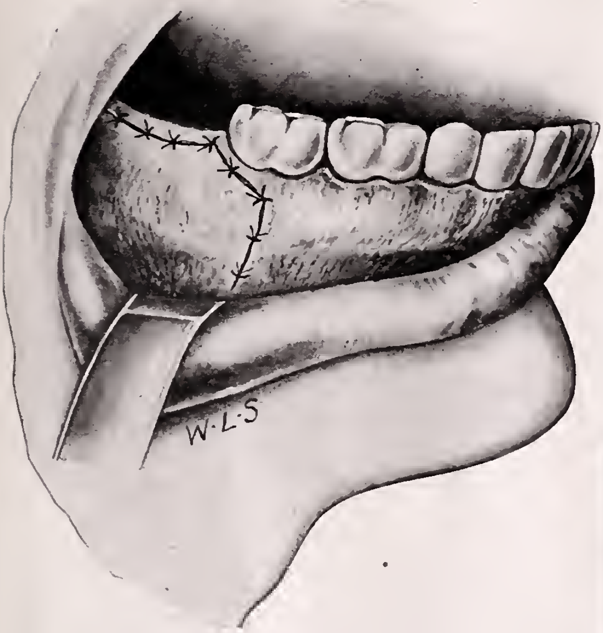
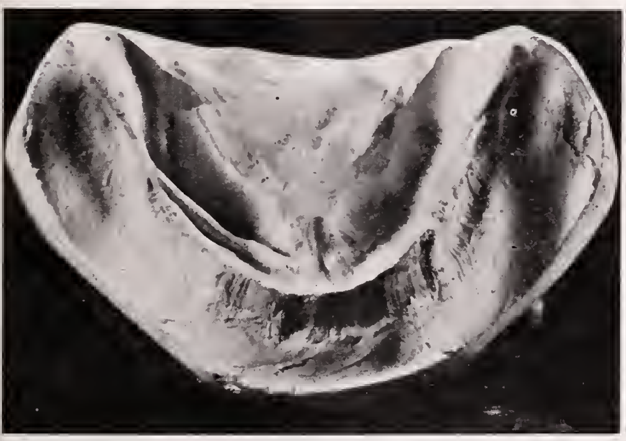


Fig. 19. Finished operation.

REFERENCES

Arthur D. Dunn—Omaha.
G. V. Block—Special Dental Pathology.
Frederick B. Noyes—Dental Histology and Embryology.
A. D. Davis—Neurological Complications—American Dental Association—1922. Lymphatics of the Jaws in their Relation to Metastatic Infection.
Wm. L. Shearer—Article on Alveolectomy and Partial Alveolectomy—Tri City Dental Society—1906.
1907—Other Designs of Operations for Impacted Imbedded Cuspids and Third Molars.
A. D. Dunn and Wm. Shearer—Focal Infection—Southern Minn. Med. Society—1920.



Figs. 20, 21 and 22. Show plaster models of sharp alveolar margin found several years after ordinary extraction in patients unable to wear plates. The mucoperiosteum is laid back and this sharp ridge removed with the rongeur forceps. The pain is relieved and plates can be worn comfortably.

Fig. 20. Shows very clearly the condition of the ridge of the mandible two years four months, after the universal method of merely extracting the teeth with no further attention given.

The alveolar process being a transitory tissue, after the teeth are removed, gradually fades away. In the fading process there is a collapse of the center of the alveolar process and the buccal and lingual surfaces collapse as it were, like a couple of boards being pushed together, thus leaving a knife edge of very hard, bony process, which is lacking in blood supply. It is this knife edge of bone which accounts for the severe complications of so many people in wearing artificial dentures.

The conditions as shown in this model is a condition I have observed after cutting down upon the center of the ridge of the edentulous mandible of five hundred and twenty-seven cases, ranging all the way from one to ten years after the teeth were removed.

DISCUSSION

H. B. LEMERE, M. D., OMAHA: I do not think we should let this paper go by without at least some word of appreciation for the original work Dr. Shearer has done in this field. The principles he laid down in his early publications have not changed up to the present time. He urged at that time the total removal of the infected bone surrounding the tooth, and now this principle is universally applied by the oral surgeons in the United States.

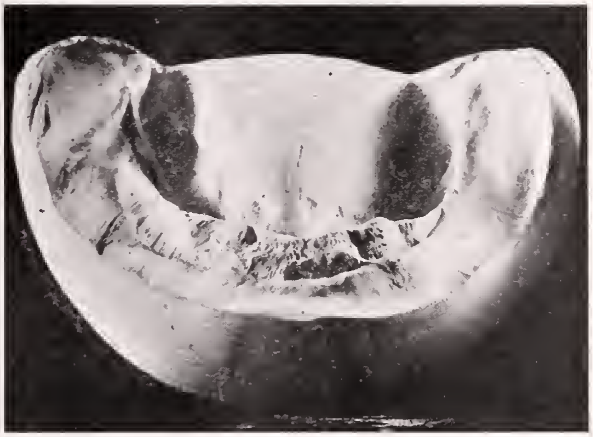


Fig. 21. Shows condition of mouth after alveolectomy has been improperly performed. In this case only part of the external alveolar process was removed. If external alveolectomy is properly performed, the internal and external alveolar process should be removed.

I think we all have to take this matter of dental infections into consideration—at least, we head men must consider it very carefully.

In consideration of eye diseases, we in our office make a routine practice of examination of the teeth, tonsils and adenoids, and sinuses as three foci of infection which affect the eyes.

I would like to ask Dr. Shearer a question in regard to the diagnosis of apical infections in the teeth. We have noticed on examination of our X ray plates a great many of the teeth which have the root canal filled have a tendency to undergo dissolution; and that the end of the tooth is undergoing absorption. There is no separation of the peridental membrane along the sides of the socket, yet the tooth is evidently being absorbed and apparently being replaced as far as the X ray shows by normal bone. Is there any general reaction to this absorption of the dental tissues?

It is very easy to associate dental effects with a great many eye troubles; yet there are other eye conditions in which we are inclined to overlook the teeth. For instance, when we see a true case of trachoma, with rough lid, we are inclined to go ahead with the treatment without looking for other head infection.

In one such case I found several diseased roots, on the removal of which the trachoma responded very much better to treatment.

Another instance was a man on whom I had done a trephining for a glaucoma. The vision was maintained for six years. The man returned with signs of a secondary infection which promised to destroy his sight. I immediately started an examination of all foci in the head, and discovered marked dental pathology. On its removal the irritation of the wound subsided, and the man has gone on without reinfection of the wound. So that I feel the warning should be given at the present time to look for dental infections in conditions in which the diagnosis of any particular eye disease is established, but which may be markedly influenced by these focal infections.

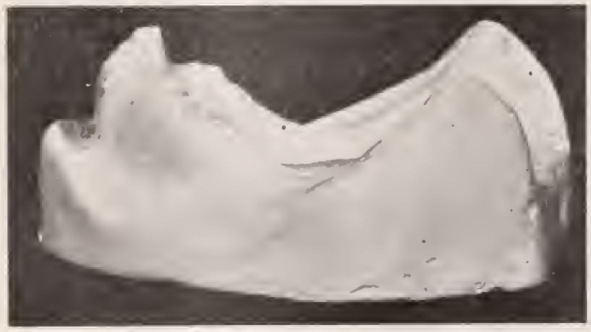


Fig. 22. Shows clearly what happens to the process a year or so after the teeth have been removed.

W. L. SHEARER, M. D., OMAHA: I wish to thank Dr. Lemere for bringing up one very important factor, and that is, the peridental membrane as not being denuded from the root end of the tooth. The peridental membrane is the storm center and denuded from the root end of the tooth. As the cementum becomes reabsorbed, there is usually a new bone filling in the presence of this infection. In a series of three hundred cases we found three hundred showing positive cultures. While we must regard them as potentially dangerous, yet I think many times they are not truly infectious. With any other inflammation they may set up a reinfection and a re-establishment of the infection which would be serious.

It is a difficult matter to diagnose many of these cases. We find the Roentgen ray does not do that for us. Of course, where we can see the root canal having been filled, we know we have a non-vital tissue to deal with. But where the pulp apparently is vital, it requires many other tests—heat, electricity, etc. We find sometimes a partially putrescent condition of the pulp where the electric test will not always rule out the condition because it carries some stimuli and will apparently be vital. Sometimes one root will be vital, and the nearest point to the infection from the canal may be non-vital. So that some of these are hard to differentiate and diagnose as vital, or pathologic.

I feel all teeth where they are carefully examined Roentgenologically and by the different tests, the process really requires a dentist trained in that field to rule out the vitality. and that all teeth where a patient is suffering from these infections should be removed.

The other important factor is the infection being left in the body of the bone. I am sure of that one thing; and while in the beginning the pioneer work was hard and extended over many years, I feel ultimately that this method, which is the same as the general surgeon would apply in other operations where he can see what he is doing, will help to solve our problem. I think future refinement of mouth surgery will be solved along this type of operation, or a modification of it.

In the infections close to the maxillary sinus many are not infected, but become infected in the removal of the teeth. If careful surgery is done we find many of the mucous membranes are involved, but not discharging into the antrum, and a subsequent infectious field is avoided.

In the differential diagnosis, we can work well with the laryngologist and it is the duty of professional men generally to cooperate.

A REPORT ON RADIUM THERAPY.

E. J. Angle, M. D., and L. J. Owen, M. D., Lincoln, Nebr.

All therapeutic agencies of value have gone through periods of empirical usage and have fallen short of over enthusiastic demands and expectations. This is no less true of radium than it is of X ray, serum therapy, and many other therapeutic measures. The experimentation and study necessary in placing the proper valuation on a method has been going on for some years with radium and considerable success is being reported by men who are entirely conservative in judgment.

One of the most thorough reports we have to date is that of Bernhard Kroenig and Walter Friedrich, of the University of Berlin. The ionization chamber, which Kroenig designates as the iontoquantimeter, was used in making all measurements of rays, from radium and the X ray, and is by far the most accurate method of measuring radioactivity. Comparative penetrability of gamma rays, and X rays filtered with various substances was tested. The biologic activity of the different rays on frog spawn, on plants, on animal tissues and on human tissues were compared. In some of the work on the penetrability of Roentgen and gamma rays the ionization chamber was placed in the rectum and vagina. The filters used in most of the work were 1 mm. of copper for the X ray and 1.5 mm. brass and 5 mm. of celluloid for radium.

Experiments of the half absorption value layer of aluminum in fully filtered X ray and gamma rays gave a value of 16.5 mm. of al. for X ray and 58 mm. of al. for radium, or a ratio of penetrability of radium over X ray of 3.5 to 1. Experiments with muscle tissue showed that 3.5 cm. of this material absorbed 47.5% of completely filtered roentgen ray and 16.7% of gamma rays; or to put this the other way, at a depth of tissue such that the X ray delivered 52.5% of the surface dose radium delivered 83.3% of the surface dose.

In the experiments wherein the ionization chamber was placed in the body cavities the comparative penetrability of fully filtered radium and X ray was shown to be about 3.2 to 1. With radium the dose that could be delivered at 10 cm. depth of tissue was more than 60% of surface dose; with the X ray the amount deliverable to tissues at 10 cm. is about 40% of surface dose.

The following resume includes 260 cases of malignant and non-malignant conditions treated with radium.

In the group of vascular growths are included the port wine or capillary nevus and the cavernous type of mark. About 70% of the twenty-one cases are of the capillary type, or the port wine stain, and in this condition the method must be that of small repeated doses such that the skin will not be burned and scarred, and a gradual shrinking of the vessels brought about, until fading of the color takes place. A marked degree of fading of the mark was obtained in all cases. The cavernous types are much more amenable to treatment, but much larger doses are possible and necessary. There were no failures of satisfactory cure among these cases, and in no case was the result marred by telangiectases.

This work was all done by means of plaques, of 5 mg. and 10 mg. radium content. The number of exposures given in the port wine marks varied from 4 to 11 in each case. In the very superficial ones dosages averaging ½ hour of the unfiltered plaque were given, followed later by filtered rays, using from .1 mm. aluminum to .5 mm. brass. In the deeper seated angiomas the number of exposures varied from 1 to 4, and filtration from .3 mm. to .8 mm. of brass was used; with a variation of single exposure time, of 1 to 4 hours.

In a series including lupus vulgaris and tuberculosis verrucosus cutis there were no failures. A fairly heavy dose as compared to other non-malignant conditions is indicated and the average case can be cleared up in one treatment. From one to three exposures were given; with an average total dosage of 5½ hours of the radium plaques; with no filter.

The cases of lupus erythematosus comprise a larger group than the previous one, but the percentage of satisfactory results is not as high. In times preceding the use of radiotherapy this disease was considered practically hopeless as to cure, and is difficult at best as local treatment does not get at the underlying cause. In the discoid type the prognosis is fairly good with radiotherapy and most of these can be cleared up. In the disseminated type the problem is more difficult and these cases often prove disappointing. Apparent eradication of the disease was obtained in all cases of the discoid type, with an average of four treatments. A moderate erythema rather than an intense reaction is desirable in these cases. Exposures were for a duration of from ½ hour to 1 hour per area, using radium plaques with no filter.

In acne rosacea from one to eight treatments were given with an average of three to the case. In some of these patients a considerable degree of atrophy was desirable and larger masses of radium than the plaques contain were used. No filter was placed over the plaque in the superficial lesion and doses were from 20 minutes to 1 hour; where brass filtration of .1 to 3. mm. was used, the time of exposure was 1 to 3 hours. In some severe cases 10 mg. steel needles were used, made into plaques, and an average of 50 mg. hours per area given. There were no cases of failure to improve the condition greatly.

We have treated five cases of toxic goitre. Two patients were treated recently enough that they are still under observation. In one case in which symptoms were mild, but one treatment was given, however, with subjective improvement. In two cases, three and four treatments respectively were given and in each there was a drop of 30 to 40 per minute in the pulse rate, with corresponding decrease in local thyroid symptoms and subjective improvement in the patients. Both of these patients have remained well for about a year to date, and are carrying on their regular home work. Dosages given were from 500 to 2400 mg. hours per treatment at a distance of from 2.5 to 4 cm. over an area of 15 sq. cm. skin surface, and cross-firing from each side of the thyroid.

Several cases of keloids have been treated and in no instance where opportunity has been had to give adequate treatment has there been failure to reduce the size of the tumor greatly. In all cases the keloid has been shrunken and softened almost to the size of an ordinary scar. Filtered radiation was used throughout in this work, and exposures were from 20 to 50 mg. hours per sq. cm. of tumor surface.

There are non-malignant conditions of the uterus that are readily relieved by radiotherapy with less danger or inconvenience to the patient than any other method gives. There are certain contraindications to the use of radium in uterine fibroid, however, which must be regarded if the best results are to be obtained: If the patient is in the child bearing age and there is a possibility of enucleation of the tumor and thus saving the uterine function; if the mass is more than about 12 to 15 cm. in diameter; or an infectious complication such as pyosalpinx is present; radium should not be used. If the tumor is pedunculated to any great degree, surgery is, we believe, also preferable to radio-therapy. The above conditions mentioned include, however, probably only the smaller percentage of uterine myoma cases and in 95% of cases where applicable, the radium will relieve the patient without mortality or danger of such, and in the majority of cases this can be accomplished with one treatment. The technique we have followed is the intra-uterine application of two 25 mg. tubes tandem in a 1 mm. brass capsule, giving from 500 to 1500 mg. hours. We have never had a failure of satisfactory results in these cases.

The type of malignancy that makes up the largest group of conditions treated, is the basal cell cancer of the face and hands. In 57% of cases, but one treatment was necessary, and of those cases treated in the last year about 90% have been cleared up with one treatment. In the early cases with little spread and induration the plaques were used, and the majority of such were cleared up with 3 to 5 hours of unfiltered radiation, per plaque area. In the more indurated lesions, needles or tubes were used, giving 50 to 125 mg. hours per sq. cm. of tumor surface. In no instance where radium was the primary mode of treatment did a failure result. There were three cases in which previous inadequate, repeated X ray treatments had so devitalized the tissues that healing has never been obtained. In many cases there were multiple foci of growth. This type of growth is readily curable by several methods of treatment, but the removal of an eyelid, part of the nose, or ear is not justifiable where these structures can be saved with very little mutilation, by the use of radiotherapy.

In the series of intra-oral and lip cancers, 27 were those presenting the typical picture of the prickle cell growth on or near the vermilion border of the lower lip. Of these lip cancers 16% had evident metastatic nodules in the submental region, and two of these were recurrences after surgical procedures with submaxilllary metastasis. One of these cases had a radical lower lip operation by one of the best known surgeons in the middle west, with prompt recurrence. He is now well after 2½ years following the use of electro-coagulation and radium. There is not a single failure to record in these lip cancers, and of the ones with palpable metastases and recurrences, all have been apparently well for periods of 14 months to 2½ years. The technique of treatment in these cases was varied somewhat according to circumstances. In 60% electro-coagulation to destroy the lip lesion and regional radiation by means of radium was the method followed. The X ray was used in eight as a prophylactic measure against metastases. In 25% radium alone was used; and where metastatic spread had taken place, the implantation of radium was done; leaving 10 mg. needles in place from 12 to 20 hours.

Of the intra-oral lesions, 45% are clinically well after a period of from 5 months to more than 2 years. These cases include cancer of the tongue, 4 cases with 3 apparently well; malignancy originating around bad teeth in the alveolar ridge, and cancer of buccal origin. The origin of disease was in the buccal membrane in the majority of cases where we have no record of clinical cure or the patient is dead. We have also to record a failure in cancer of the tongue and in tumors of alveolar origin. The electro-thermic coagulation is valuable in the treatment of intra-oral lesions and we have made extensive use of it in treating these cases. Where at all practicable we also buried needles below the territory destroyed by the electric needle, and in addition to this, external deep radiation to the submaxillary and cervical lymphatic areas was given, using lead cups, having from 12 to 16 sq. cm. of radiation surface.

We have used radium on cases of sarcoma. One was a lympho-sarcoma beginning in the left parotid region and had had mal-treatment in the form of incision and drainage before radium was used. Metastases to the carotid triangle took place and the last treatment was by implantation of radium in this region. Another case had had two attempts at surgical removal of a growth originating in the right lower jaw. Electro-thermic coagulation plus radium from within the mouth and below the jaw were used. The third case of this group was a malignancy of subdermal origin in submaxillary region. All of these cases are well after a period of from 1 to 2 years.

It is in cancer of the cervix that the best results have been recorded in radium treatment of deep seated malignancy. We have used radium in conjunction with surgery or following operation with recurrence, and in all instances were cooperating with the surgeon at his request. We cannot give records on these cases except in one instance in which the patient is dead. In the cases where radium alone has been used, in no instance have we to record a failure of clinical cure to date. All these cases are alive now and improved in health at periods from 11 months to nearly 2 years following treatment. One of these patients had been told by a competent surgeon that her condition was hopeless, and that he could do no more than try to keep her comfortable for a few months. This case is the first one of this series, and the patient now weighs about 20 lbs. more than at the time she started radium treatment. These patients have received an average of 3 treatments. In the first, from 2400 to 3000 mg. hours were given; 1000 mg. hours or more of this in the form of needle implantation, as far laterally into the broad ligament region as was compatible with safety. Only gamma radiation has been utilized otherwise, full brass filtration being used, and the radium placed in the uterine canal when possible. In connection with our report on uterine cancer we wish briefly to state some results recorded by others who have used radium since the early years of its clinical use, and on patients enough to make their data of conclusive value.

Simpson last year reported 21% well after the five year period, in cases that had been deemed inoperable, and of the cases classified as borderline 33% were well at five years after treatment. The report included 117 cases. H. Cheron and Ruben-Duval reported 253 cases, in an unselected series with 28% well after 3 years. Kelly and Burman reported 213 cases treated with radium. Of the operable cases all were alive and apparently well at a year, 70% had gone over two years and 30% of cases were past the 3 year period. He compared this record with an equally large series of cases treated with surgery in which there were 75% of recurrences with 60% of these showing up in the first year. F. J. Taussig collected data from 12 authors showing a total of 1114 cancers of the uterine cervix treated with radium. Of these 20% were well after five years. 415 cases of this series were recorded as operable cases, and of this group 31% are well after the five year period.

In rectal cancer we have no cases in which a clinical cure was obtained. In but one case that we have treated was a hope for the best even possible, and this patient died of intercurrent disease while under treatment. The other cases were all similar to the one that had been treated for hemorrhoids for one and a half years before the cancer was diagnosed and the patient sent in for radium. Treatment was given as a palliative measure to prevent closure of the bowel, which intent was successful.

No type of neoplasm is more malignant than the melanocarcinoma originating in pigmented moles. We have recently seen four cases in which general carcinomatosis was present, the metastasis having followed very quickly the simple excision of a pigmented mole that had begun to enlarge. In one instance the primary lesion had been simply sheared off with scissors and the patient assured she would have no trouble with it. In another of the above cases insufficient X ray therapy had been given early in the course of the disease. It is doubtful that recovery has ever occurred in a case wherein melanotic metastasis to the lymphatic glands has taken place. In one case with such a lesion originating on the foot, the growth could be traced over an area of 3 to 4 cm. from the primary focus, but no evidence of distant metastasis was found. A surface application of 1950 mg. hours of radium filtered only with .5 mm. of silver was applied; resulting in the destruction of the immediate tissues to the plantar fascia and an intense reaction over a diameter of nearly 10 cm. This patient is now well after nearly a year since treatment.

In two cases of breast malignancy, wherein surgical intervention was refused, radium was used, with implantation of needles in the last case which has been treated, but eight months ago. The other case has been well for more than two years. In both instances the site of growth was in the duct immediately beneath the nipple. Dosages from 1200 mg. hours to 3000 mg. hours of implanted radium and in addition surface radiation with the deep therapy cups, were given.

There are many non-malignant conditions in which radium has proven superior to other methods of treatment either because of vastly better cosmetic results or because of its ability more readily to cure the condition.

In the treatment of malignant disease radium has repeatedly and in many hands, proven its value; and is probably the most valuable single agent we have. In the whole field of cancer therapy the best results are obtained by a judicious use of all of our agents supplementing one with the other as desirable.

EPISIOTOMY AND ITS REPAIR.*

Wm. Shepherd, B. Sc., M. D., Rulo, Nebr.

Perineotomy, or episiotomy the term first applied by Michaelis in 1799, is the incision of the vulva during delivery to prevent laceration of the perineum; substituting a clean wound of definite size, in a place where it can do no harm, for an ugly ragged tear, in a place where it may cause immediate danger and subsequent injury.

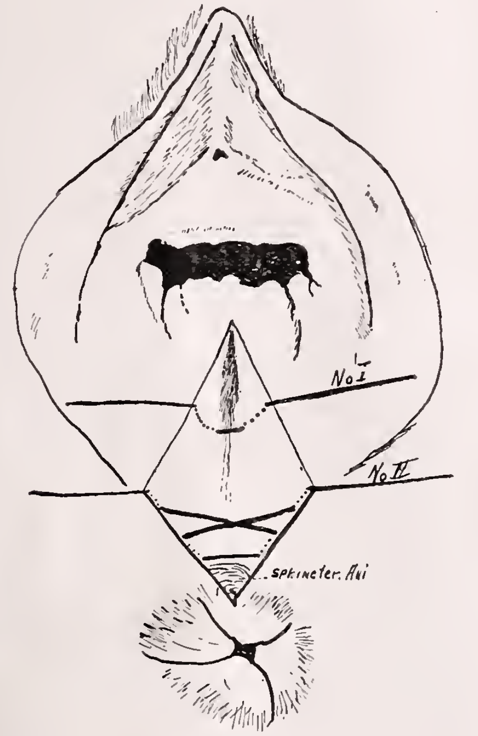
Most text books on obstetrics treat this operation with little or no favor, stating that in the majority of cases it is unnecessary and meddlesome. But as we become more civilized and our method of living becomes more complex, the process of delivery becomes more and more a pathological procedure and requires a greater refinement in its management. How many primiparas get through labor with a first class perineum? It is common to hear someone quote a very low percentage of tears, but he is speaking of tears of mucous membrane and skin and is forgetting and neglecting the tears, or the relaxation, of the most important structure in the perineal floor, namely the musculature whose function it is to aid in maintaining the intra-abdominal pressure and to support the pelvic organs.

The indications for this procedure are: (1) threatened rupture of the perineum; (2) narrowness of the external genitalia; (3) rigidity of the soft parts; (4) faulty presentation; (5) undue size of the head; and (6) any demand for hasty delivery. All of these indications seem to me absolutely, depending upon the degree. But it is especially in the third—rigidity of the soft parts—that I wish to urge the consideration of this procedure. It is unnecessary to call your attention to the number of times we find little or no muscular support after the delivery of a primipara with a rigid perineum, at the time of which we felt rewarded for our patience because the immediate results were an intact skin and mucous membrane. A delivery of this kind is condemning our patient in after years to a procidentia uteri with its accompanying symptoms pertaining to the uterus, bladder and rectum. Besides the avoidance of these late untoward results the immediate result of shortening a tedious labor by an hour or more is by no means a trivial thing. It may be the determining factor in the infant's life, and may save the mother a severe degree of shock.

The selection of the site of incision is very important and, contrary to popular opinion, should be in the central raphe rather than laterally. First; because of the ease of repair, of which I will speak later, and second; because in a lateral episiotomy one must sever the fibers of the constrictor vaginae, transversus perinei and levator ani muscles, besides a rich supply of vessels and nerves. A central incision severs none of these important structures. And it gives ample room for the delivery inasmuch as an incision of one centimeter increases the circumference of the vulvar orifice by two centimeters, thus allowing an increase of from two to six or more centimeters.

---

*Read before the Richardson County Medical Society, April 4, 1923.



A central perineotomy is performed in the following manner: When the head is crowning, the first two fingers are inserted between the head and perineum, a pair of perineotomy scissors inserted between the fingers, and the perineum is incised in the central raphe half way or more to the anus.

The repair is done after the delivery of the placenta if that is delivered, according to the method of Crede, with the first uterine contraction following the birth of the child. The method of repair, which was devised by the resident staff of Greenpoint Hospital, Brooklyn, during my stay there is as follows: A light pack is inserted in the vagina to keep the field clean; the levator ani muscles are caught high in the incision by a number three gut suture. One suture is usually sufficient to approximate them, but occasionally two are needed. Next a subcuticular gut stitch is taken, entering at the muco-cutaneous border on the right side, the wound is crossed and a subcuticular bite taken on the left side, the needle entering at about the center of the cutaneous incision and emerging near the anal end. The wound is crossed, the needle inserted near the anal end and emerging at about its middle, the wound is crossed again and the bite taken in the vaginal end of the cutaneous incision, emerging at the mucocutaneous junction on the left side. When this subcuticular figure of eight suture is made tense it approximates the wound perfectly, no suture in the vaginal mucous membrane being necessary as results will prove.

This simple suturing of the floor is both rapid and effective. It can be completed in three minutes, the patient need spend no extra time in the hospital on its account, and in the course of a few weeks the resultant scar is indistinguishable from the normal central raphe even to the trained eye. The chance of infection, too, is greatly lessened by the use of only two sutures where formerly from six to fifteen or more were used.

Perineotomy is recommended for better results with primiparae and the above as a simple, safe, speedy and efficient method of repair.

SPECIFIC HYPERSENSITIVENESS OR ALLERGY AS A COMMON CAUSE OF ILLNESS.*

W. W. Duke, M. D., Kansas City, Mo.

The rapid development of the past ten years in the subject of specific hypersensitiveness has made this sphere of knowledge very important in the diagnosis and treatment of disease. It is with the object of presenting briefly some of the many ramifications of this interesting subject that this paper is written.

The application of our knowledge of specific hypersensitiveness to clinical medicine originated primarily with the observations of Meltzer who in 1910 noticed the similarity between the bronchial obstruction of asthma and that found in animals dying of anaphylactic shock. He made the unique suggestion that true bronchial asthma is a phenomenon of anaphylaxis. Since his publication, many clinical symptoms other than asthma have been attributed to this remarkable state observed frequently in humans, which is discussed by recent writers under several terms, namely, anaphylaxis, allergy, protein sensitization, specific hypersensitiveness, natural hypersensitiveness, etc. It is not possible in this paper to discuss the vast literature on the subject and for this the reader is referred to the writings of Meltzer, Coca, Cooke, Walker, Rackemann, Zinsser, Goodale, Longcope, Lowdermilk, Boughton, and others.

---

*Read before Third Councilor District, Nebraska State Medical Society, October 12th, 1922.

GENERAL CONSIDERATIONS.

A rather large proportion of individuals inherit a constitution which makes it possible for them to become hypersensitive to one or more alien substances. This peculiar constitution is not only hereditary, but is a dominant characteristic, according to Mendel's law. Individuals who inherit this constitution sooner or later become sensitive to some foreign substance and after becoming sensitive react in characteristic ways whenever they come into intimate contact with the substance to which they are sensitive. Naturally acquired sensitiveness in humans may be very marked in degree. For example, an individual who has become sensitive to horse dander may be made violently ill by exposure to a minute quantity of horse dander in the air around horses. Individuals sensitive to egg may have a violent reaction if they taste coffee which has been clarified with egg or if they eat a small piece of cake containing a trace of egg. Patients sensitive to pollen may have severe hayfever or asthma if exposed to the minute trace of pollen in the air at certain seasons or if so small an amount as .01 mg. of pollen extract is injected subcutaneously.

The degree to which patients become sensitive varies. Some slightly sensitive to pollen, for example, may be comfortable if they live in a down-town district in the pollen season. Others cannot tolerate even the small amount which they encounter there. Sensitiveness may vary in degree at different times. Some patients sensitive to egg, for example, may at times be able to tolerate the small amount encountered in some cooked foods while at other times the merest trace may make them ill.

Substances to which individuals can become sensitive may gain entry into the body by several routes and cause illness. It may be through the absorption of air-carried particles which come in contact with the mucous membrane of the eyes, nose, pharynx, larynx, bronchial mucous membrane or, less often the skin. This may cause a local reaction at the site of contact or less often, a reaction in some remote tissue after absorption. Contact may be more direct than that mentioned above. For example, it may be contact between solutions and the skin or between foods and the gastric mucous membrane. This may cause trouble locally or in distant tissues after absorption. This mode of entry of allergin into the tissue is more likely to cause symptoms in distant organs because of the fact that greater quantities are more likely to be absorbed. Foreign materials of this sort may be carried by the blood or lymphatics to distant organs, after reaching the subcutaneous or submucous tissues by absorption or through the action of infection or from insect bites, hypodermic injections, etc.

The time at which reactions appear after exposure to alien matter, as above mentioned, varies. In fact, it varies from a moment to twenty-four hours or more. Reactions after therapeutic injections of pollen usually occur quickly, indeed sometimes even during the administration of the pollen solution. A reaction may not occur for hours, however. For example in some patients sensitive to milk or eggs, the reaction asthma will not occur sooner than thirty-six hours after a therapeutic injection of milk or egg.

The tissues most commonly affected by allergy are those which come into contact most frequently with foreign substances which tend to sensitize—namely, the mucous membranes of the eye, nose, pharynx, and bronchial tubes, less often the skin and the mucous membrane of the alimentary tract, and much less often, internal organs as the bladder. However, symptoms may be manifested solely in remote organs while the tissues at the primary portal of entry may show little or no reaction. For example, asthma or eczema may be a result of the ingestion of milk or egg; conversely dyspepsia and abdominal pain may follow the subcutaneous injection of pollen extract.

SPECIFIC HYPERSENSITIVENESS.

Some substances have a greater faculty for sensitizing than others. For instance, pollen sensitizes more frequently than do other parts of a plant. Furthermore, some pollen such as that of ragweed, sensitizes much more frequently than does others, such as that of golden rod. The proteids of egg sensitize more frequently than do the proteids of beef. The future of the interesting subject in the diagnosis and cure of disease lies in the discovery and listing of the great number of bodies which tend to sensitize, and in the practical knowledge of the whereabouts of such bodies.

In the subsequent paragraphs are summarized impressions and conclusions gained by an experience with this subject during a period of six years. Our experience has been a little different perhaps from that of physicians who specialize in this line of work. We believe this is because relatively few of our cases (except pollen cases) have been referred because of allergic symptoms. The great majority have been picked out of a group of obscure cases observed in a consulting medical practice and many were discovered largely through the rather free use of intracutaneous tests. As a result, we believe we have encountered more of the mild cases and fewer of the severe cases than writers who have specialized on the subject. Also, we believe our percentage of the less common manifestations such as the gastric and bladder cases, has reached higher totals, than have those of physicians who have drawn cases which have been previously diagnosed. In these, I am sure the proportion of nasal, bronchial, and cutaneous cases runs higher.

Pollen: Pollen is far the most common cause of allergy in this geographical district. The more important pollens are those of the common abundant weeds. It goes without saying that pollens of uncommon plants are not important for the simple reason that the average individual does not come in contact with them frequently. On this account, the pollen of cultivated plants is of interest only in instances where the habits or occupation of an individual brings him in contact with them frequently. Also, light air-carried pollen, as ragweed pollen, is more important than insect carried pollen (daisy, dandelion, golden rod, and other flowers). This is not only because the former are more abundantly produced, but also, because they are carried by the air for considerable distances from their sources of origin. Furthermore, pollen of plants which pollenate for a short season only, such as some trees, is far less important than the pollen of weeds, as ragweed, which pollenates for weeks or months, and for this reason gives rise to a long arduous season. For these reasons, therefore, the plants which pollenate over a long season, grow abundantly and produce large quantities of air-carried pollen, are the important factors in the causation of pollen allergy in humans.

The common flora of this district, which we have picked out for study with the aid of Dr. R. C. Lowdermilk, one of the pioneer investigators in this line, and Mr. O. C. Durham, are mentioned in the table below. The small ragweed is the most common offender. According to the experience of Dr. R. C. Lowdermilk, the pollen of weeds and trees underlined have given positive reactions more frequently than have those of the other flora mentioned and with these findings, we agree. The dates of blooming were obtained from Mr. O. C. Durham and are based upon his own practical observations made while collecting pollen. Dates of pollenization vary from one to three weeks in different years.

Specificity of Pollens: Pollens are very specific in their action, or better expressed, an individual sensitive to pollen often is sensitive to one variety only, in fact, often to a certain pollen growing in a limited district. Some individuals are sensitive to one pollen only. The majority are sensitive to more than one. It is not very rare to find pollen patients who are sensitive also to other derivatives of plant life, such as orris root or to vegetable proteins, grains, or to emanations from animal hair.

Flowers, leaves, roots, stems and wood are not common sources of allergy in this district. We have encountered only a few. Worthy of especial mention is the case of a physician of our acquaintance who invariably has nasal and bronchial allergy and swelling of the eyelids within ten minutes if he puts on any variety of panama hat. This experiment he has tried many times. He is sensitive to no other straw and to no other type of hat. We have also studied the case of a carpenter who suffered from asthma and nasal allergy so long as he was in his shop. We found that an attack of sneezing could be brought on by inhalation of air from a sack of birch wood shavings and that the intracutaneous injection of an extract of birch shavings immediately gave rise to a typical wheal with pseudopods. Similar treatment with shavings and extracts from seven other woods which he used in his work did not cause him to sneeze and gave no cutaneous reaction whatever. The above cases are analogous to the timothy case described by Cooke. Patients tested with extracts made from the leaves, stalk and blossom of plants have reacted most frequently in our experience to white clover.

It is quite common to find individuals sensitive to orris root and since this product is used widely in the manufacture of perfumes and toilet articles, such as tooth paste, face powder, sachet, soap, etc., it is worthy of emphasis.

One should also mention, in addition to the products derived from plant life, those derived from coal and oil which are used so commonly in perfumes, flavoring extracts, as solvents, drugs, etc., which are encountered almost daily by a great number of individuals. These should be taken into account in the study of obscure cases.

As examples of hypersensitiveness to products of the above type, may be mentioned benzol, a by-product obtained in the manufacture of coke, and used commonly as a substitute for gasoline and in the arts. We have observed a patient so sensitive to benzol that not only was she made ill when exposed to its fumes, but when a drop of benzol was applied to a scarified area on the skin a wheal developed immediately, and finally reached a length of 20 cm. Many other patients whom we have tested similarly with benzol have given no reaction whatever. We have likewise observed a patient sensitive to the vapors of gasoline; one sensitive to turpentine, who became violently ill after the painting of her house; several sensitive to some constituent of certain perfumes (not orris root) and to face powder. Scratch tests with these gave immediate reactions. We have observed a considerable number of patients who sneeze and notice swelling of the turbinates after inhalation tests made with one or several of the essential oils used commonly in the manufacture of perfumes, but who failed to give positive cutaneous tests. Goodale has mentioned the fact that patients with pollen allergy often sneeze or have asthma after the inhalation of the odor of scented flowers. A distinction must be made between these and patients who are actually specifically sensitive to some constituent of the plant other than pollen.

Drugs: Drug idiosyncrasies have been observed and discussed since the early days of medical science. Cooke has drawn attention to the similarity of their manifestations and those of allergy due to other causes. It is not uncommon to observe patients who are made ill by ordinary doses of cocaine, quinine and other alkaloids, the bromides, iodides, aspirin and other coal tar products, belladonna, arsphenamine and numerous other drugs which to normal individuals have no marked untoward effect. Many remedies called heart depressants have gained their reputation for no reason other than that they tend to sensitize and cause phenomena of allergy. Each of several patients, observed by the writer, who were made ill by aspirin were hypersensitive to it and had symptoms resembling those of allergy caused by other agents. The illness in each case was caused by a small dose. The average patient can tolerate very large doses. It is interesting to mention in this connection apothesin and novocaine, as a relatively common cause of chronic eczema of the hands and face in dentists. Striking cutaneous reactions can often be obtained in the drug allergies.

We recently observed an interesting case of generalized eczema which appeared in a patient who had taken luminal for many months as a remedy for epilepsy. Her fits suddenly became so frequent under its use that she was having about five attacks of grand mal daily when she consulted us. Intracutaneous injection of a suspension of luminal gave rise immediately to a wheal and after discontinuance of its use, not only did the eruption clear, but her grand mal attacks became as infrequent as before its use.

Animal Hair and Feathers: Emanations from the skin and fur of animals have been less frequent causes of allergy in our experience than pollen and the foods. This type of sensitiveness, when it exists, however, is equal in severity to that caused by pollen. This source of allergy would not be extremely important were it not for the fact that exposure of some individuals even to the fur of animals used in wearing apparel, carpets, curtains, and in the upholstery of furniture causes disagreeable symptoms.

House Dust: This interesting source of allergy has been mentioned recently by Cooke. He was able to obtain typical wheals by the intracutaneous use of extracts of house dust which he could not identify with other allergens. This source of allergy must be considered especially in patients who have asthma in certain houses and are free from it in others. According to our experience, it is relatively common and one can usually obtain convincing cutaneous tests in cases of this sort.

Smoke: The majority of patients with nasal or bronchial allergy are made worse by the non-specific irritating effects of smoke or vapors. Some complain specifically of coal smoke, gasoline smoke, or tobacco smoke. We have observed several patients who seemed specifically hypersensitive to certain types of smoke and not to others. For example, a woman aged thirty-four with family history of asthma complained of asthma when in certain houses—in fact, she traced her illness to houses heated by open fires or furnaces. She stated that she was free of asthma in steam-heated houses. She stated that her illness started soon after exposure to the smoke generated by a burning wood-shed close to her window. She reacted cutaneously to none of some two hundred substances with which we tested her except condensed wood smoke(Wright's). An attack of asthma immediately followed both inhalation tests and scratch tests. Furthermore, a scratch test made with condensed wood smoke, at a time when she was free of asthma, gave rise to a wheal 5 cm. in length and a general reaction which necessitated the use of adrenalin.

Foods: Food is a very important source of allergy. It has ranked second only to the pollens in our experience. An individual may be sensitive to one or several articles of food; often to a group of somewhat similar foods such as grain or sea foods. An individual may be sensitive not only to one article of food, such as egg or milk, and to one food only, but may be sensitive to one particular constituent of a food, such as lactalbumen; in fact, in the case of milk, he may be sensitive to, and made ill by, some article of food eaten by the animal furnishing the milk. This latter very interesting fact has been brought to light especially by pediatricians in tracing out the source of eczema in infants. Frequently an infant is found sensitive to some article which it has never eaten, but which is a constituent of the mother's diet.

Sensitiveness to foods is rarely so marked as is sensitiveness to pollen, although one occasionally encounters patients made violently ill by the merest traces. Delayed reactions are more frequently observed in food cases than in pollen cases.

Bacteria: Patients with infectious diseases, as acute tonsillitis or acute articular rheumatism, occasionally have hives and other symptoms of allergy. The part played by bacterial proteins in the etiology of allergy has been especially urged by Walker.

In patients who have asthma following "colds" it is necessary to determine whether the "cold" is a primary or contributory cause. Furthermore, it is necessary to determine whether the "cold" is an actual rhinitis or whether it is in reality an attack of nasal allergy due to a reaction against pollen or some other nonbacterial substance. For example, a mother gave us the history of her child who had frequent colds each winter followed by long sieges with asthma. One could have judged from the history that the nasal infection was the primary cause of the child's asthma. Cutaneous tests proved him very sensitive to egg, however, and after egg was eliminated from the diet he had a number of "colds" but they lasted a few days only and were never accompanied or followed by asthma.

Intracutaneous tests made with the protein of staphylococcus aureus and albus, and B. coli very commonly give cutaneous reactions which are very different from the controls. They more often resemble the inflammatory reactions given locally by vaccines than the wheals which appear immediately after the use of pollen extracts.

Insects: It is not uncommon for patients and friends to remark that they are made ill by the bites of certain insects. Dr. Canby Robinson mentioned the case of a patient who had a large area of angioneurotic oedema as a result of a hornet's sting. An associate of mine, following insect bite (probably mosquito) had not only generalized urticaria and angioneurotic oedema, ulcer, gall stones, or chronic appendicitis) than it is in normal individuals. This phase of the subject has been discussed more fully in a previous paper.

Bronchial allergy due to sensitiveness to milk or pollen may be brought out or made worse by acute bronchitis or rhinitis. Nasal sinusitis and polyps often play a contributory role in the etiology of asthma and nasal allergy. The importance of nasal defects in the etiology of asthma, while important has been greatly overestimated in some cases, and many patients have been made worse by radical work in the nose designed to relieve this condition.

While asthma is often, or usually, made worse by infections in the respiratory tract, one occasionally sees a chronic case apparently cured by an infectious disease. We have observed two chronic cases early in our experience, one of which was apparently permanently cured by an attack of erysipelas and one by a severe attack of typhoid fever.

Disfunction in the glands of internal secretion is rather frequently noticed in allergic individuals. We have observed goiters more commonly in hypersensitive patients than in others. We observed one case of severe chronic asthma of unknown origin which disappeared coincident with the development of a classical case of exophthalmic goiter. It is interesting to mention in this connection that the one remedy which almost never fails to relieve allergy, namely, adrenalin, is a product of one of the much discussed ductless glands.

SYMPTOMS

Symptoms of allergy are numerous; in fact, the more one studies the condition the more he is inclined to believe that reactions may involve almost any tissue or organ and cause disorder.

The more common symptoms are those which involve the mucous surfaces, which are exposed most frequently to the action of foreign substances which tend to sensitize, namely, the mucous membrane of the respiratory tract. Symptoms involving the skin, subcutaneous tissues and the internal organs are less common, and are usually part of a general reaction resulting from absorption of an offending allergin.

Symptoms involving superficial mucous surfaces, may occur as a result of the local effect of an allergin, or as part of a general reaction. For example, asthma may be the result of the inhalation of pollen or may be the result of a subcutaneous injection of pollen extract. Dermatitis on the hands and face may be a result of the local action of an allergin on the skin of the hands and face, or as we have observed once, as a direct result of pollen injections in the treatment of hay fever.

Symptoms occurring as a result of a general reaction are often multiple. For example, asthma occurring as the result of a general reaction from the eating of egg, is more frequently accompanied by other manifestations such as gastrointestinal disturbance, urticaria, etc., than is asthma caused by the inhalation of pollen (local reaction).

The symptoms to be mentioned subsequently, are those which are more commonly observed in patients having reactions. All may occur as a local or as part of a general reaction.

Ocular Symptoms: Oedema of the conjunctiva, puffiness, itching, swelling and redness of the lids. Excessive lachrymal secretions.

Nasal Symptoms: Sneezing. Pallor and swelling of the mucous membrane of the nose, associated usually with excessive watery or clear mucous secretion.

Pharyngeal Symptoms: Itching of the soft palate and pharynx; spasmodic cough; rarely, slight oedema of the uvula.

Bronchial Symptoms: Bronchial obstruction associated with inspiratory and expiratory wheezing (the latter more pronounced) and often associated with the expectoration of thick, mucoid sputum, rich in eosinophiles. In a less marked case, cough and shortness of breath on exertion may be the only marked bronchial symptom.

Cutaneous Symptoms: The more conspicuous are urticaria, angioneurotic oedema, eczema, erythema and pruritis, which may be either local or general. The dermatitis is often associated with marked swelling and redness of the skin, cracking of the skin (especially on the hands) profuse greasy secretion, and desquamation of the superficial epithelium. It may be most severe, and when the face is involved, may almost obliterate the features and transform it into a swollen, red, greasy, weeping, unsightly surface.

Gastro-Intestinal Symptoms: Abdominal pain, either steady or griping, local or general, mild or very severe, is the most interesting abdominal symptom. It is often related to the taking of food, and quite frequent-but also an attack of intestinal colic which rendered him very ill for twenty-four hours. He has had milder attacks on numerous occasions following mosquito bites. This source of allergy is very real and is not extremely rare.

Hypodermatic Injections: Hypodermatic injections of vaccine, therapeutic sera, pollen extract, salvarsan, and other drugs frequently give rise to phenomena of allergy which may be very severe; in fact, in rare instances even fatal. Before administering horse serum therapeutically, one should always inquire for a history of hay fever, asthma, and urticaria and if possible, make an intracutaneous test with 0.01 cc. of horse serum. The writer once saw in consultation a patient who had been subject to asthma (probably horse asthma) who had been given horse serum for the first time in her life. A severe chill with immediate complete collapse and death was the result. One should always warn patients who have horse sensitiveness against the use of horse serum unless they are tested intracutaneously with horse serum just before its administration. This warning saved a patient of mine a prophylactic dose of antitoxin which almost surely would have proven fatal. As mentioned by Coca, it is the first dose of serum which one need fear—not the second dose. If a patient tolerates one dose, there is reason to believe he will tolerate a second. A patient very sensitive to horse dander, whom we have observed, tolerated a dose of antitoxin without ill effect. Intracutaneous tests with horse serum, however, were negative.

(to be continued)

55TH ANNUAL CONVENTION OF THE NEBRASKA STATE MEDICAL ASSOCIATION. HELD AT LINCOLN, MAY 15-17, 1923.

Invocation

Rev. Walter Aitken, Pastor St. Paul Methodist Church, Lincoln.

We are grateful to Thee, gracious Father, for all those benign influences which have entered into our lives, lifting us to higher plains and sending us onward with greater hope and buoyancy to our tasks.

If in days gone by men have taught hatred of the body because it was the seat of evil, we have come through Christian teaching to recognize it as the temple of God, worthy of the consideration of a sacred shrine.

We thank Thee for the ministry of men who are devoting themselves with scientific skill to bring about a better state of health and life.

We thank Thee for this spirit of unselfishness and sacrifice which in many instances is evidenced.

We pray Thy blessing to be upon us today and upon this convention as it meets here in this city to give consideration to the great and scientific principles involved in the study of medicine applied with remedial effects upon those who come under the care of the beloved physician.

We thank Thee for the comfort and the assurance that the physician brings to the family circle and to society at large; for the alleviating of fears; for the inspiration of hope, and for the good health assured.

We thank Thee for the open doors that come to the physician and that he is in a position to be a blesser of men's minds as well as their bodies. We realize the connection between the physiological and the psychological, and we believe the ministry of medicine comes to us not only in the application of those healing arts, but in the counsel and advice and brotherly relationships that are established.

Let Thy blessing be upon our brothers and all those who are thus engaged in their work as we are engaged in ours, that together we may go forward to make the world better and happier, in the name of Christ, our Lord. Amen.

PRESIDENT BAILEY: We always open our sessions with invocation, but I am sure we all feel this invocation is an inspiration for our whole session.

I have the honor of introducing to you my friend, Frank Tomson, who, in the absence of President Eiche, will offer the welcome of the Chamber of Commerce.

ADDRESS OF WELCOME

Mr. Frank Tomson, Chamber of Commerce, Lincoln, Nebr.

Yesterday President Eiche indicated it would be impossible for him to be here and asked me if I would take his place on the program. I am very happy to do so, because Mr. Eiche has very much at heart the interests of Lincoln, and I have great respect for the profession which you represent.

You have honored Lincoln many times in the past, and one honor you have placed upon us gives us great pleasure, in that you have selected a man dear to the hearts of Lincoln people—Dr. Bailey—as your President.

I understand that this is your fifty-fifth annual meeting. I believe the state is fifty-six years old. I suppose you were organized about the time the state came into the Union, and held your first annual meeting a year thereafter. So, as we think of the continuous efforts which you have made; when we think of your continued activities, we have a growing respect for the organization which you represent.

Physicians not only teach us science, but they teach us to be practical. I heard recently, when in the east, a story illustrating how the wife of a physician had come to be practical in her views. It seems her husband had been ill for some time. There were grave doubts as to his recovery. Knowing that in the night he ran a little temperature, she decided she might control it by using some ice. She hailed a passing ice wagon and told the man she wanted a nickel's worth of ice.

"What on earth do you want to do with it?" was the response.

She explained that the doctor ran a temperature, and she wanted to use the ice in order to hold the temperature down.

The man said, "Woman, a nickel's worth of ice won't last through the night."

She replied by saying there was no assurance the doctor would last through the night, either.

I mention this to illustrate our views of the practical expand by contact with you.

You come here representing more nearly the homes of the state than any other association could represent, unless possibly an association of mothers. You are in the heart of the home, in the hearts of the people who make the Nebraska homes. Here in Lincoln we are making a city that is typically Nebraskan. It is the center of state institutions, and we are undertaking here, with the cooperation of the state, to build our institutions and to develop a kind of culture, if you pleace, which will represent Nebraska, and the activities of the commonwealth.

Because you come from out in the state, may I refer briefly to the fact that, with the aid of the state throughout, we are building a capitol here which will represent, if completed along the lines on which it is designed, the highest level of architectural achievement, probably, that this country has ever known; and many believe the highest achievement that architecture in all the world, here in Nebraska—our own home state. We may all make a careful study of this structure in order that there may be no cheapening limitations when it comes time to finish this building that is to represent the best thought, the highest purposes and achievement of the state.

In harmony with this capitol, the people of Lincoln are undertaking an achievement in community development, which will reach out and be in effect a state development in its contact and scope, and which will make your capital city the most desirable spot of the middle west as a home city. You are naturally more concerned with a home life of the city than with commerce or other phases of our community activity.

None could be more welcome to Lincoln than the representatives of your profession; none, even including the clergy, has contributed more to uplift and better living than has your profession. You have wonderful opportunities for touching the life of the people. You have fine discrimination and judgment. We respect you for it.

Again I say we appreciate the honor that is bestowed on Lincoln by your coming here, and the honor which you have bestowed upon our citizen, Dr. Bailey. We trust that your deliberations may be constructive, and that you may be inclined to return again and again.

RESPONSE.

H. E. Potter, M. D., Fairbury, Nebraska

Mr. President, Fellow Members: In responding very briefly, I wish to thank the Chamber of Commerce and Mr. Tomson for the very cordial welcome he extends to us. I also want to thank him for the high tribute paid the medical profession and am going to admit frankly and confidentially that all of the fine things he says about us are true. I would also thank the Lancaster County Society for its generous hospitality. For many years each alternate year we have been meeting here in Lincoln, and we are always glad to come. We always enjoy our stay here. You always make us feel at home—in fact, it seems almost like home-coming week to us.

We are not here, Mr. Tomson, to discuss salesmanship; we are not here to discuss business or financial methods. During the many years of my attendance at our state meetings, I do not recall ever having heard those subjects discussed from the floor. We have left our homes. We are neglecting our business, and are here trying to help each other—trying to gain information from each other in order that when we return to our various homes we may thereby be better enabled to be of help to those who place their faith and trust in us.

That is the mission of the Nebraska State Medical Association. Mr. Tomson. And when men of that type convene, we feel you are perfectly secure in extending to them your city's hospitality.

HOUSE OF DELEGATES—FIRST SESSION.

The first session of the House of Delegates met in the Lincoln Hotel, Tuesday, May 15th, and was called to order by President B. F. Bailey at 1:00 P. M.

It was moved and seconded that the minutes of the 1922 session be adopted as printed in the Journal. Motion carried.

The delegates from the different county societies were then seated. Roll call showed 50 members present.

Dr. A. J. Jenison of Harvard was nominated president pro tem. It was moved and seconded that the nominations be closed and the secretary instructed to cast the vote of the House for Dr. Jenison as president pro tem. Motion prevailed and the vote was cast as ordered.

It was moved that the reading of the report of the Board of Councilors meeting be dispensed with and that it be adopted as printed in the Journal. Motion seconded and carried.

The secretary stated that the report of the Program Committee had been published in the Journal. It was moved that the present program be adopted. Motion seconded and carried.

Dr. Dillon stated that the report of the Committee on Public Policy and Legislation had as yet not been approved by the whole committee. It was moved that Dr. Dillon be given more time and allowed to report before the adjournment of the convention. Motion seconded and carried.

The following reports were then given and referred to the Council for action:

The report of the Committee on Journal and Publication was read by the secretary in the absence of the chairman, Dr. Long.

The report of the Committee on Care and Prevention of Contagious Disease, Dr. Dillon, chairman, and the report of the Medico-Legal Defense Committee, Dr. von Mansfelde, chairman, were received as printed in the Journal.

The report of the Campaign Committee was read by Dr. Hohlen. It was moved and seconded that a vote of appreciation and thanks be extended to Dr. Hohlen for his work on this committee. Motion carried.

The report of the Council on Medical Education was read by Dr. J. S. Welch.

The report of the Committee on the Study of Cancer was read by the secretary in the absence of the chairman.

The report of the Committee on Arrangements was given verbally by President Bailey.

The report of the Committee on Memorials was presented by Dr. Overgaard, the members standing during its reading. He then moved that two pages be set aside in the Journal in memoriam of the deceased members. This motion was seconded and carried.

It was moved by Dr. McConaughy that a night letter be sent to Dr. Long to extend the greetings of the Association. Motion seconded and carried.

A communication from Dr. C. H. Sheets was referred to the Board of Councilors.

Secretary Adams presented a resolution for a new committee called the Public Activities Committee, but requested that it be not acted upon until the last session.

A recess of three minutes was then declared preceding the election of the Committee on Nominations.

The following members were nominated in their respective districts:

1st District—Dr. J. A. Henske; 2nd—Dr. K. S. J. Hohlen; 3rd—Dr. C. L. Hustead; 4th—Dr. Lucien Stark; 5th—Dr. W. H. Heine; 6th—Dr. J. D. Smith; 7th—Dr. A. J. Jenison; 8th—Dr. W. J. Douglas; 9th—Dr. M. O. Arnold; 10th—Dr. J. M. Willis; 11th—Dr. H. H. Walker; 12th—Dr. A. L. Cooper.

It was moved, duly seconded and carried that the above members be elected.

Adjournment.

SECOND SESSION.

The second session of the House of Delegates was held in the Lincoln Hotel, Wednesday, May 16th, and was called to order by President Bailey at 1 P. M. Roll call showed 49 members present.

The minutes of the previous meeting were read by the secretary, and, with no corrections, stood approved.

Under unfinished business, Secretary Adams reported that as per the instructions of the House of Delegates at the 1922 session, he had written the Iowa State Medical Society in regard to holding a joint meeting with them, but had received no reply.

The report of the Committee on Public Policy and Legislation was read by Dr. Dillon and referred to the Council.

Dr. A. R. Mitchell was extended the courtesy of the floor and recommended to the House the use of the new magazine, Hygeia, published by the American Medical Association for the laity, in promoting publicity work.

The minutes of the Board of Councilors first session were read by Dr. Overgaard. It was moved by Dr. Henske that they be adopted as a whole. Motion seconded by Dr. Stark and carried.

Dr. A. D. Dunn presented a report of the delegates to the 1922 session of the A. M. A. It was moved by Dr. Overgaard that this report be accepted with a vote of thanks. The motion was duly seconded and carried.

The amendments to the By-laws in regard to redistricting the state were presented by Dr. Overgaard. the matter to lay over one day.

The proposed changes in the Constitution, as presented at the 1922 session were read by Dr. Adams. Upon motions, duly seconded and carried, they were adopted.

After some announcements the meeting was declared adjourned.

THIRD SESSION

The third session of the House of Delegates was called to order by President pro tem, A. J. Jenison, at 8:00 A. M. Roll call showed 40 members present.

The minutes of the previous meeting were read by the secretary, and, with no corrections, stood approved.

The report of the Committee on Nominations was then given as follows:

President-elect	Morris Nielsen
	F. A. Wells
	C. A. Slagle
Vice-presidents	Frank Tornholm
	W. J. Douglas
Delegate to the A. M. A.	A. D. Dunn
Alternate	W. R. Neumarker
Delegate to the Council on Medical Education	J. S. Welch
Member of Journal Committee	B. F. Bailey
Member of Medico-Legal Defense Committee	J. S. Welch
Chairman of Campaign Committee	K. S. J. Hohlen
Councilors— 9th District	R. D. Bryson
10th District	F. H. McCabe
11th District	C. A. Selby
12th District	A. J. Stewart

There being no nominations from the floor, the House proceeded to the election. Drs. Bixby and Heine were appointed tellers.

Election of president-elect by secret ballot resulted as follows: Morris Nielsen, 39; C. E. Slagle, 1. Dr. Nielsen was declared elected president-elect.

It was moved by Dr. Hildreth that the rules be suspended and the secretary instructed to cast the vote of the entire House electing the following:

Vice-presidents: Drs. Frank Tornholm and W. J. Douglas.

Delegate to the A. M. A.: Dr. A. D. Dunn; Alternate; Dr. W. R. Neumarker.

Delegate to the Council on Medical Education: Dr. J. S. Welch.

Member Committee on Journal and Publication: Dr. B. F. Bailey.

Member Committee on Medico-Legal Defense: Dr. J. S. Welch.

Chairman of Campaign Committee: Dr. K. S. J. Hohlen.

Councilors: 9th District—Dr. R. D. Bryson; 10th District—Dr. F. H. McCabe; 11th District—Dr. C. A. Selby; 12th District—Dr. A. J. Stewart.

The votes were cast as ordered.

A telegram of greeting from Dr. F. A. Long was read by Dr. Bailey.

The question was raised in regard to the vacancy in the 5th District on account of Dr. Nielsen being elected president. The chair ruled that there was no vacancy until there was a resignation. This would not take effect until the first of the year and the vacancy could be filled by President Bailey.

The report of the Councilor' meeting was read by Secretary Adams. It was moved by Dr. Davis that it be adopted. Motion seconded and carried.

Secretary Adams presented a resolution for a new committee as follows: The Committee on Public Activities shall consist of three members from the Nebraska State Medical Association appointed by the President. In addition to these members this Committee shall be composed of one member from each state organization that is engaged in public welfare work, together with one member from the University of Nebraska, College of Medicine, and one member from the Creighton Medical College. These members are to be chosen by their own organizations in whatever manner they desire.

The duties of this Committee will consist of all matters relating to public policy and education. The members of this Committee chosen by the Nebraska State Medical Association shall at all times work with and under the advice of the Committee on Public Policy and Legislation. This Committee shall choose its own chairman.

If at any time, resources being available, it is desirable. this Committee may employ, with the sanction of the organizations which it represents, a part The duties of the secretary will be to fulfill the will or full time man to be known as executive secretary. of the Public Activities Committee.

It was moved by Dr. Overgaard and seconded by Dr. Bryson that this be adopted.

Dr. Bailey then offered the following resolution and moved its adoption as a substitute to the one offered by Dr. Adams:

WHEREAS, The lack of general information among the people of the world as to the accomplishments of the medical profession and allied sciences has left them without a fair basis of judgment, and

WHEREAS, the judgment of the people without a basis is more faulty on account of the natural credulity of an uneducated, unscientific public,

WHEREAS, the medical profession suffers in its effort to do an unselfish altruistic, scientific work for the human race, therefore

BE IT RESOLVED, That it becomes a duty of the medical profession to arrange for a definite plan of comprehensive, progressive and persistent education of the people along the lines that shall make it possible for them to be less the dupes of the ignorant pretender or the visionary dreamer, and

BE IT RESOLVED, That we recommend to the House of Delegates that the President of the Nebreska State Medical Association appoint a committee of five whose duty it shall be to form a working organization to consist of their own committee with one member from such of the prominnent public welfare organizations of the State as they shall deem wise. Said committee to have the endorsement of the Nebraska State Medical Association in raising a fund and carrying on the education as above mentioned.

The motion was seconded by Dr. Orr and carried.

It was then moved, duly seconded and carried. that the second set of resolutions be adopted.

Proposed changes in the By-laws in regard to redistricting the State were offered by Dr. Selby. Amend Section 6 of Chapter IV as follows: Change Boyd County from District No. 4 to No. 8; Dawes and Sioux Counties from District No. 8 to No. 12; Logan County from District No. 9 to No. 11; Kimball and Cheyenne Counties from District No. 11 to No. 12.

It was moved by Dr. Bryson and seconded by Dr. Overgaard that the proposed amendment to the By-laws be adopted. Motion prevailed.

It was moved by Dr. Overgaard that a rising vote of thanks be given to the Lancaster County Medical Society for their splendid entertainment. Motion seconded and carried.

It was moved by Dr. Orr that a vote of thanks be given to the retiring officers for their faithful work. Motion seconded and carried.

It was announced that the 1924 meeting would be held in Omaha.

Adjournment.

BOARD OF COUNCILORS—FIRST SESSION.

The Board of Councilors met in the Lincoln Hotel, Tuesday afternoon immediately following the adjournment of the House of Delegates. The following members were present. Drs. Tornholm, Stewart, Lehnhoof, Bryson, Selby, Cook, Potter, Overgaard and Nielsen.

It was moved and seconded that the report of the Campaign Committee be placed on file. Motion carried.

It was moved that the matter regarding Dr. G. H. Marvel be referred to Dr. Tornholm, councilor of that district and that he make personal investigation. Motion seconded and carried.

It was moved, seconded and carried that the report of the committee on Medical Education, and the report of the Journal Committee. be referred to the House of Delegates with the recommendation that they be adopted.

It was moved, seconded and carried that the report of the Committee on the Study of Cancer be received and the committe discharged.

In regard to the communication from Dr. Sheets, it was moved by Dr. Lehnhoff to recommend to the House of Delegates that the president appoint a committee of five to report on the proposition of securing legislative enactment by which additional laboratories may be secured to meet the needs of the western part of the state, to report at the next state meeting. The moion was seconded and carried.

The following resolution, presented by Dr. M. G. Wohl, was read by Dr. Overgaard, who moved that its adoption be recommended to the House of Delegates:

WHEREAS, The diagnosis of disease by laboratory methods, instead of being confined to physicians trained in medicine, is being exploited by lay technicians and commercial houses, and

WHEREAS, There is danger of this specialty in medicine becoming degraded by unseemly and blatant advertisements of commercial diagnostic laboratories now appearing in certain medical journals, therefore

BE IT RESOLVED, that the status of the clinical pathologist and the radiologist is on a par with that of the internist, surgeon or other specialists in medicine, and conformable to the same code of ethics and high moral standards.

RESOLVED, That the publication of advertisements calling attention to the special merits of a particular laboratory or announcing prices of various laboratory examinations is contrary to good taste and subversive of the ethics of the practice of medicine.

RESOLVED, That the Journal of the American Medical Association, the official journals of the various state medical associations, and other reputable medical periodicals, be requested to bar the advertisements of commercial diagnostic clinical and radiological laboratories from their advertising pages, permitting only licensed graduates an insertion of their professional cards, giving but name, specialty and address.

RESOLVED, That in the interest of the patient and for the advancement of scientific medicine, encouragement should be given to the establishment of resident clinical pathologists and radiologists in all communities where the population and number of physicians warrant specialization in these fields of medicine.

Dr. N. T. Johnston's resignation from the Council was read by Dr. Nielsen. It was moved by Dr. Stewart that this resignation be accepted. Motion seconded by Dr. Potter and carried.

Dr. Bryson reported that he had received notice from the Hall County Medical Society that Dr. H. B. Boyden of Grand Island had been expelled from the society for unethical advertising and unprofessional practice.

Dr. Bryson presented the following resolution and moved its adoption: Whereas the Abrams method of practice has been investigated and found to be inefficient and fraudulent, this Council holds that anybody using the machine or method of practice is considered guilty of unethical practice and not eligible to membership in the county society or State Association. The motion was seconded by Dr. Tornholm and carried.

Adjournment.

SECOND SESSION.

The second session of the Board of Councilors was held in the Lincoln Hotel, on May 16th, immediately after the adjournment of the House of Delegates.

The following members were present: Drs. Nielsen, Bryson, Tornholm, Selby, Overgaard, Douglas, Potter, Lehnhoff, Stewart and Cook.

It was moved that Dr. Dillon's report be recommended to the House of Delegates for its adoption. Motion seconded and carried.

The budget for 1924 was then made up as follows:

Councilor District Meetings	360.00
Journal Fund, per member	$ 1.75
Campaign Committee	500.00
Secretary-Treasurer's office	800.00
Salary of Secretary-Treasurer	600.00
Librarian	25.00
Salary of chairman of Medico-Legal Defense Committee	600.00
Expense of Medico-Legal Committee	200.00
Councilor's expenses	295.35
Official reporter	145.00

Railroad fare of Delegates to A. M. A. to be allowed upon proper presentation of amount, and also Delegates to Council on Medical Education, and Program Talent.

Upon motion, duly seconded and carried this budget was recommended to the House of Delegates for adoption.

Adjournment.

REPORT OF DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION FOR 1922

It was thought by your delegates that it might be useful to submit to the House a brief resume of certain actions taken and problems envisaged by the last House of Delegates of the American Medical Association. Certain problems which sooner or later must present themselves for solution were stated in opening addresses by Dr. F. C. Warnshuis, Speaker of the House, President Hubert Work, and President-elect Dr. George E. de Schweinitz:

(1) The education of the public regarding scientific medicine with constructive recommendations therefor, and with full cognizance of the numerous adjustments made necessary by the fluidity of our times.

(2) Public health insurance which must be combated because it is prejudicial to the best interests of both physician and layman, and leads to low-grade, perfunctory medical service.

(3) A code of ethics affecting group medical practice.

(4) The trained nurse and general nursing problems.

(5) Political activities. It is necessary that the association become active politically because of the tendency of legislatures, Congress and governments to increase their control of all health agencies and activities to the detriment of medical practice, viz.: Harrison Law, Medicated Alcohol Rulings, Sheppard-Towner Bill, etc. A bureau on medical legislation was recommended.

(6) President Work stated that because the ra- Association is making a general assembly increas- pidly growing membership of the American Medical ingly difficult, he was wholly committed to dividing the United States into districts with sectional medical associations, viz., decentralization, the parent body to function as a business and governmental organization. A committee was appointed to study this problem.

(7) Instruction of the public on the provinces and limitations of State Medicine.

(8) A semi-annual meeting of the House of Delegates.

These addresses, which gave the pitch for discussions and actions, were followed by the reports importanteitfltaoinshrdl tao aoi oin oin oin oinrddl of standing and special committees. Among the important recommendations which were adopted were:

(1) Establishment of a lay medical journal, Hygeia.

(2) Establishment of the Americal Medical Association Bulletin not only as a bulletin of the House of Delegates, of the Councilors, etc., but as a bulletin devoted to organization problems in general.

(3) The "open door" policy in regard to medical research (vivisection).

(4) A resolution on prescribing of alcoholic liquors, giving physicians the right to prescribe alcohol with governmental assurance of a pure supply of bonded whiskey, the Secretary of the Treasury and Congress to be memorialized to that effect.

(5) A resolution disapproving of the Sheppard-Towner Bill.

(6) The establishment of a central bureau for

the consideration of all legislation pertaining to public health and the practice of medicine.

(7) Amendment to Article I, Chapter II, Section 4, of the Principles of Medical Ethics to read as follows:

"Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or ofganizations, whether by circulars, or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by in- or by indirect advertisement, or by furnishing or indirection through solicitors or agents of any kind, spiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self laudations defy the traditions and lower the tone of any profession, and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, is the establishment of a well merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not per se improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.

"It is unprofessional to promote radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any method to gain the attention of the public for the purpose of obtaining patients. (13, 16, 17, 31. 39.)"

(8) A resolution on State Medicine, defining the same:

"The American Medical Association hereby declares its opposition to all forms of 'State Medicine', because of the ultimate harm that would come thereby to the public weal through such form of medical practice.

"'State Medicine' is hereby defined for the purpose of this resolution to be any form of medical treatment, provided, conducted, controlled or subsidized by the federal or any state government or municipality, excepting such service as is provided by the Army, Navy or Public Health Service, and that which is necessary for the control of communicable diseases, the treatment of mental diseases, the treatment of the indigent sick, and such other services as may be approved by and administered under the direction of or by a local county medical society, and are not disapproved by the state medical society of which it is a component part. (4, 35, 36)."

(9) Recommendations in regard to the development and promotion of medical schools were needed.

(10) The appointment of a committee of five to represent the American Medical Association in a conference with various educational bodies and standardizing institutions of the United States, looking to the establishment and maintenance of a competent impartial commission to investigate systems and methods of healing. It is to be noted that this movement had its origin in the House of Delegates of the American Medical Association.

The above has been given as a brief and wholly incomplete digest of activities of the House of Delegates. It will serve, however, to bring the Nebraska House of Delegates more closely in touch with some of the problems which were subject for consideration by the national organization.

Respectfully submitted,
A, D. Dunn—1923
R. W. Fouts—1924

REPORT OF DELEGATE TO THE COUNCIL ON MEDICAL EDUCATION.

Your delegate to the Counci ofl Medical Education of the American Medical Association desires to submit a brief report concerning the activities of that council at their recent meeting in Chicago. Allow me to say first that I appreciated the opportunity you extended me and I assure you that it was well worth the time and outlay of any member to attend such an inspiring congress.

At this congress there were six sessions, each having a special relation to a separate Council of the American Medical Association, namely:

1. Medical Education and Hospitals.
2. Public Health and Instruction.
3. American Medical Colleges.
4. State Medical Boards.
5. American Hospital Service.
6. United States Public Health Service.

My mission was concerned chiefly with Medical Education and Hospital Service. It is impossible to go into great detail in such a brief report as I here can make. However, I desire to refer to a few of the salient features of the congress from my viewpoint.

MEDICAL COLLEGES. There is a definite tendensy among the medical colleges to change the curriculum. It is believed that too much required work is being demanded of the medical students. There are too few elective hours with a resultant tendency to blight the development of individuality on his part. It was suggested that such a change would also tend to make fewer specialists during the college years and interest more men in general practice work.

The great shortage of graduates of medicine was explained on the post war reduction of classes. This year will see a thousand more medical students graduate than last, next year another thousand the following year another additional thousand, after which there is a pause at the same number. These figures are based on the statistics of registration in the medical colleges at present. Many more students are applying for registration than can be permitted to enroll and the tendency seems to be to urge the old medical schools to increase their accommodations.

A single standard of admission to practice for all doctors, of whatever school, was advised. Efforts are being made to bring about such a law in several states. It was thought that this would help destroy the evil of cultism to a very large degree.

There was a most interesting forenoon spent on the subject of ideals of the physical plant in medical education. This, of course, incorporated the medical schools and the associated teaching hospitals. Slides illustrating many of these teaching plants were thrown on the screen. It was pleasing to see the University of Nebraska with her teaching hospital exhibited and favorably discussed. Complementary discussion pointed to the efficiency attained with the moderate means at hand, and the correctness of the plans proposed for future development. I was particularly pleased with this because for four years I have served on your Hospital Committee and it is my opinion that our State University Hospital is functioning at a very high degree of efficiency. You would be interested to know that they have abandoned the old idea of pavilion and cottage types of hospitals for the many storied structures with elevator communication between allied departments.

INTERNSHIPS. The present status of internship work was much discussed. There is a great shortage of interns, but in spite of that the tendency is to keep away from salaried internships, and adhere to the service given by the hospital as the correct remuneration for the doctors' service and time. In certain states the board of licensure requires an internship. The conference was very decided in its belief that this requirement was just, only if the work in the hospital was carefully standardized and supervised. That is to say, it is unfair to the young doctor to compel him to serve a year or more in any hospital which had not been correctly prepared to teach the internship work.

It was advocated by many that technicians should be used more and more to relieve the item of routine laboratory work. This would give more time for clinical study and perhaps some research problems.

In this connection it was pointed out that the larger hospitals were more easily standardized than the small ones. Two decades ago the number of large hospitals far exceeded the number of small ones, but today exactly the reverse is the case, and there is a tendency for small hospitals such as so-called county hospitals, to develop. The greatest evil of such institutions seems to be the lack of responsibility on the part of any one or few individuals. Under such circumstances no one is held responsible and the work is improperly standardized. During the year 1922 we attempted, in Nebraska, to get hospital reports from every hospital in the state. A fair percentage responded. The lack of organization in many of these hospitals in Nebraska makes correct standardization well nigh impossible. Further education on the part of doctors as well as the people, seemed to be the only remedy offered at the national conference.

ORGANIZATION OF THE PUBLIC FOR CO-OPERATION WITH THE MEDICAL PROFESSION

This was discussed from the standpoint of the medical education, health officer, the general practitioner and the trustees of medical colleges, by medical men as well as by laymen. In many respects this program was the most interesting of the session. Perhaps the greatest effort being made by the American Medical Association along this line is through the journal "Hygeia" published under the direction of D. Victor C. Vaughan. In all major accomplishments pertaining to the health of a community, state or country, it is necessary to first master the fundamentals. For example the building of the Panama canal necessitated mastering the fundamentals of yellow fever. It then became necessary to teach medical men these fundamentals and finally to get the cooperation of the laity. This applies in all matters of health, and the people read so little except in the daily papers, that these fundamentals are indeed slow in reaching them. Considering the fact that medical ethics and laws governing medical publicity do not permit the doctor to speak through these agencies, it is easy to understand why the best there is in scientific medicine is not rightly and early understood by the common people. It requires time and a knowledge of publicity which the medical profession does not possess. We have no difficulty in matters well understood by the people, in controlling disease. No one complains about using antitoxin for the control of diphtheria, because the fundamentals governing the question are settled. The cultist no longer hoodwinks the people to the detriment of better scientific medicine measures in this field. The difficulty arises very often in advance questions. Since the public reads only the newspapers, and since the advance questions are often none too well understood insofar as the fundamentals are concerned, they becomeconfused. Witness cancer, if you please, and our efforts during cancer week immediately followed by the unscrupulous Abrams advocate or other cultists. It is in this stage of crystallizing out the fundamentals, that our contact with the public fails. There is a lack of organization on our part to reach the people in a manner understandable by them. This journal, Hygeia, offers one source of instruction not only to the doctor, but to the layman who will read it. It is but one remedy for the situation. The present day is pregnant with many suggestions and you will hear some of them during the program of this session.

It was the advice of none less than Frank Billings that the medical profession should once and forever stop posing even by inference, as a competitor of any cultist. By even allowing this we advertise him to the layman. He has always been here,and probably there will always be a new supply as soon as an old one is pushed off of the field by the onward march of real scientific medicine. Our attitude should be, that each cult is but another menace not only to the doctor but to the public.

SUMMARY. This meeting, therefore, was a program pointing to a greater coordination in all departments of medical education. It touched the field not only from the viewpoint of the medical student in his college and teaching hospital days, but in all phases of allied practices. The interne, the general practitioner, the specialist, the nurse, the general hospital, State boards, public health departments, social bodies and the public itself. The proceedings of the Congress are to be seen in the J. A. M. A., and I recommend them to you

Yours truly,
J. S. Welch

REPORT OF COMMITTEE ON JOURNAL AND PUBLICATION.

Year by year in every way the Nebraska State Medical Journal is growing in importance, if one may paraphrase a popular saying. The financial report for 1922 is included in the audit and need not here be rehearsed.

There were 444 reading pages published in 1922 and it is planned to publish 480 reading pages in 1923.

At the January 1923 meeting the Publication Board voted to place the 152 public and institutional libraries of the State on the regular mailing list of the Journal, it being thought that the educational value would more than compensate for the cost involved.

The handsome surplus piled up as shown by the financial statement has been made possible in part by volunteer uncompensated work on the Journal, a condition which may not continue and should not be expected in view of the present finances.

We ask a continuation of the appropriation of $1.75 per member to the Journal Fund.

F. A. Long, Chairman.

REPORT OF COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS.

Your Committee on Medical Education and Hospitals, desires to report that the work outlined to you at your spring session has been finished and a detailed report of all hospitals submitted to the Council of the American Medical Association. A very flattering letter of acceptance was received from Secretary N. P. Colwell.

Trusting this work was done to your entire satisfaction, we desire to remain

Yours truly,
J. S. Welch
A. D. Dunn
I. S. Cutter.

HOUSE OF DELEGATES

County	Delegate & Alternate	Present		
Adams	W. S. Fast	1		
Boone	F. M. Barns	1		1
Box Butte	C. E. Slagle	1		1
Boyd	C. L. Martin			
	J. R. Beatty			
Buffalo	Henry Farrell			
	C. H. Fox		1	
Burt	H. W. Benson	1		
Butler	O. E. Longacre	1	1	1
Cass	A. R. Hornbeck			
	W. M. Barrett			
Cedar-Dixon-Dakota Thurston-Wayne	Lucien Stark	1	1	1
Chase-Dundy-Hayes-Hitchcock	J. F. Premier	1	1	
Clay	A. J. Jenison	1	1	1
Cuming	T. D. Thompson			
Custer	J. D. Wilson	1	1	1
Dawson	A. E. Wade	1	1	
Dodge	W. H. Heine	1	1	1
Fillmore	J. Bixby	1	1	1
Franklin	R. B. Campbell	1		
Furnas	F. H. McCabe	1	1	1
Gage	J. C. Waddell		1	
Hall	E. G. Johnson		1	
Hamilton	J. M. Woodard		1	
Harlan	W. G. Rundle			
	J. N. Campbell			
Holt	C F. Ulrich			
Howard	M. O. Arnold	1	1	1
Jefferson	H. H. Humphrey			
Johnson	J. G. Rubelman	1		1
Kearney	F. A. Wells	1		
Keith	C. H. Smith			
	C. E. Vandiver			
Knox	C. H. Swift			
Lancaster	K. S. J. Hohlen	1	1	1
	Geo. W. Covey	1	1	1
	H. H. Waite	1	1	1
Lincoln	H. H. Walker	1	1	1
Madison	A. C. Barry			
Merrick	E. E. Boyd			
Nance	J. D. Davis	1		1
Nemaha	B. F. Lorance	1	1	
Nuckolls				
Omaha-Douglas	J. A. Henske	1	1	1
	W. L. Sucha			
	E. L. Bridges		1	1
	W. Pruner			
	L. B. Bushman		1	1
	A. Sachs			
	Palmer Findley			
	J. F. Langdon	1		
	Warren Thompson			
	C. A. Roeder	1	1	1
Otoe	C. W. Parks			
Pawnee	A. Byford Anderson			
Phelps	P. A. Sundbury			1
Pierce	F. G. Salter			
	C. E. Rodgers			
Platte	A. A. Bald	1	1	1
Polk	J. W. Neville			
	C. L. LeMar			
Red Willow	J. M. Willis	1	1	
Richardson	C. L. Hustead	1		
Saline	W. H. Pallett			
Saunders	J. G. Smith	1	1	
Scottsbluff	A. L. Cooper	1	1	
Seward	H. J. Wertman			
	J. E. Meisenback			
Thayer	R. F. Decker		1	1
Valley				
Washington	R. J. Murdock			
Webster	R. S. Martin		1	1
York	E. B. Hanna	1	1	
	OFFICERS			
President	B. F. Bailey	1	1	1
Vice-President	R. W. Fouts			1
Vice-President	A. E. Cook	1	1	1
Secretary-Treas.	R. B. Adams	1	1	1
Librarian	W. P. Wherry		1	1
	COUNCILORS			
1st District	A. P. Overgaard	1	1	1
2nd	H. J. Lehnhoff	1		
3rd	C. P. Fordyce			
4th	A. E. Cook	1	1	1
5th	Morris Nielson	1	1	1
6th	Frank Tornholm	1	1	1
7th	H. E. Potter	1	1	1
8th	W. J. Douglas		1	
9th	R. D. Bryson	1	1	1
11th	C. A. Selby	1	1	1
12th	A. J. Stewart	1	1	
EX-PRESIDENTS				
M. L. Hildreth		1	1	1
A. S. Von Mansfelde		1	1	1
H. B. Lowry				
J. E. Summers				
F D. Haldeman				
W. O. Bridges				
A. R. Mitchell		1	1	1
Robt. McConaughy		1	1	
H. M. McClanahan				
A. B. Anderson				
A F. Jonas				
F. A. Long				
Harold Gifford				
L. M. Shaw				
P. H. Salter				
J. P. Lord		1	1	
I. N. Pickett				
D. C. Bryant				
J. P. Gilligan		1	1	
E. W. Rowe				
W. F. Milroy				
C. L. Mullins				
J. M. Banister		1		1
H. W. Orr		1	1	1
M. S. Moore				
B. B. Davis				

In Memoriam

When, with bowed head,
And silent streaming tears,
With mingled hopes and fears,
To earth we yield our dead;
The Saints, with clearer sight,
Do cry in glad accord,
"A soul released from prison
Is risen, is risen,—
Is risen to the glory of the Lord."
—Selected.

Inscribed to the Memory of

CHARLES INCHES, Died January 11, 1923
President of the Nebraska State Medical Association 1891-92

A. D. NESBIT, Died January 13, 1923
President of the Nebraska State Medical Association 1911-12

J. C. Bishop	May 14, 1922
H. M. Bailey	April 20, 1922
A. H. Felch	June 3, 1922
G. W. Meredith	June 15, 1922
L. C. Swartzlander	July 18, 1922
N. McCabe	August 8, 1922
G. W. Ira	August 26, 1922
W. J. Stephenson	September 1, 1922
C. A. Hale	October 18, 1922
W. H. Byerly	October 19, 1922
L. B. Smith	November 19, 1922
George Ewh	December 1, 1922
H. P. Wekesser	December 15, 1922
C. N. Meriwether	February 25, 1923
H. S. Summers	April 10, 1923
George Haslam	April 24, 1923
H. D. Shields	April 25, 1923
C. R. Snell	May 8, 1923

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor,......Madison, Neb.
R. B. Adams, M. D.,
Associate Editor,......Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.

F. A. Long, Chairman......Madison
W. O. Bridges......Omaha
B. F. Bailey......Lincoln
R. B. Adams, Ex officio......Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII July, 1923 No. 7

AN OPPORTUNITY FOR ORGANIZED EFFORT

To four men belong the distinction of presenting the most constructive thoughts ever placed before a meeting of the Nebraska State Medical Association at one session. Dr. B. F. Bailey, Dr. C. A. Roeder, Dr. E. L. Bridges and Dr. Lucien Stark have covered every economic phase and problem of the medical profession, if we will only acknowledge it. It is deplorable that it has taken us so long to find out that we really have any shortcmomings. Many of us were complacently ensconced upon a pedestal of dignity, shrouded in a robe of false security, and now we are rudely awakened to a sense of realization that we have been remiss in our duty to the public.

It is a sad commentary on our profession that we have men in our ranks who are so laking in decency and principle that they purposely mislead the public for personal gain. According to the ideals of these men, medicine is only a means of a livelihood and they have no regard for its application toward humanitarian possibilities.

In one address the author stated that we have too many hospitals. True, but what may we expect when it is possible for unscrupulous persons to rent any available dwelling or store building, and install a lot of unnecessary and obsolete electrical equipment to impress the patient by calling it a hospital. I feel that a hospital should be chartered by a board, the same as banks, and supervised by the board thereafter.

The greed displayed by many of our men is a factor that has caused the public to question many of our well intentioned activities and prevents much good from being accomplished. It is going to be a long and hard fight for the medical profession to get back into the good graces of the public, and that can only be accomplished when we show a willingness to take the public into our confidence by acknowledging that the profession, as a whole, does not countenance the actions of the unscrupulous. For the present we have had pointed out to us not only that we are in error, but suggestions for correction have been advanced which should at least be tried out.

I am in accord with a movement to give the public some information that will instruct it in some of the problems we have to contend with, that they may be enabled to see our side of it as well as the willingness with which we are entering this new field of endeavor. The unkind criticism of one another should be abolished and a measure of tolerance and helpfulness inaugurated instead. Unless we present a united front in this matter our efforts are bound to fail. The family doctor needs no apology for his existence. His position is the axis upon which the entire structure of the medical profession revolves. Without him the public would be at a loss indeed. It is he who determines the outline of treatment in all cases and recommends specialized effort where indicated. It is he who comes in contact with the patient first and on account of his position is most intimately associated with him, and his personal interests are developed along the same social and civic lines, by reason of having similar community problems to contend with.

When we analyze the prominence that the so called other practitioners have attained, we know that it is not through merit, but solely by a united effort of publicity. If these persons can cooperate toward this end, I know that the medical profession can likewise accomplish the same results of acquainting the public with what we want them to know. I sincerely hope that the members of the Nebraska Medical Association will heed the message contained in the four splendid papers above referred to, banish our former lethargy and faithfully carry out the trust that the Public has placed in us.

—MORRIS NIELSEN

GETTING IN CLOSER TOUCH WITH THE PUBLIC

It was brought quite clearly before the members of the Nebraska State Medical Association at various times during their meeting in Lincoln that they might expect from the public the same confidence and respect which they extend to each other. This seems to be a very logical conclusion. If one fails to find a family cooperative and helpful as among its members, one hesitates to expect one of that family to take up team work with another organization, for all business organizations have in them, after all, the touch of the family. They must live together, they must work together, they must serve together, they must be all the time actuated by the helpful motive. No man is very long successful in any business who tries to impart to the world that he is the only one to be trusted and that his competitors are hardly worth while. It weakens him immensely and casts no doubt upon his competitor. As a matter of fact, the strong men of every business and every profession recognize their own human limitations. This recognition leads them to be thoughtful and judicial in their own decisions and charitable in their judgment of the motives of others. We believe every single educated member of the medical profession desires to do his best for his patients. Our neighbor may err in his deductions, in his judgment, so may we, but let us give credit for the human effort that must always be tempered by human ability.

The Nebraska State Medical Association is going to try this year, through a special committee authorized by the Association, to come in closer touch with the public, to have it possible for the people to know more about us and about our work, about what we have done, and what we are trying to do, and why we want their support in the future. The committee will be appointed so as to be published in the August number of the Journal that they may go to work for an active fall. Nebraska falls are an inspiration and may this work begun in the fall be an inspiration to our whole Association. Let every single one of our members—and we hope that before the beginning of 1924 every man properly eligible for membership will have sent in his application—let every single member, I say, look squarely at the matters suggested in the first of this editorial and give a sacred vow that he will be loyal to his profession, to his fellow practitioner, to the Association of which he is a member, and through this, loyal to the best interests of the people of his country.

—B. F. BAILEY.

CHRONIC OSTEOMYELITIS

Inflammations of the chronic variety affecting the medulla of long bones have their origin from the less virulent or slowly acting organisms, as tuberculosis, syhilis, typhoid, glanders, leprosy, actinomycosis and others. By common usage, however, osteomyelitis is also denominated chronic, when after manifestations of the acute forms have subsided, the disease continues, or has become recurrent.

Tuberculosis is the most frequent of the chronic inflammations of bone attacking usually the cancellous areas. Children furnish most of the cases and the prognosis, with an early diagnosis and effective treatment, is ordinarly favorable as to life and limb. In adults the prognosis is not good; hence its surgical treatment must be more radical. The medical and mechanical phases of the treatment are very important and require intelligent direction and supervision. The most important feature of the successful treatment is an early diagnosis and correspondingly prompt treatment. Afer deterioration of the general health and great destructive changes in the bone, the chances for favorable results are greatly impaired. The X rays show a destructive process of bone, and in the active cases there is no reproduction of bone as in pyogenic osteomyelitis. With good X rays and an ability to read them, a diagnosis can be made very early.

The history of tuberculosis of bone as usually observed, is characterized by a series of recurrences or exacerbations which gives emphasis to the fact that the treatment given is too often fitful and sporadic. It should always be borne in mind that the time required for resolution, consolidation, and ossification, to complete the actual cure of the lesion is ordinarily from three to five years, and may be as long as ten years.

Limbs with fractures involving osteomyelitic shafts need no longer be amputated, as by the aid of efficient Dakinization with adequate extension to prevent shortening, these limbs may be saved, good union secured and permanent healing effected.

Syphilis in bone usually begins as a periostitis. With an early diagnosis and proper treatment, it should be controlled. In some cases advanced, irreparable changes have occurred; even so, extraordinary cures may be effected by proper specific treatment.

The result of delayed diagnosis in acute osteomyelitis is so disastrous and furnishes so many of the chronic variety, that I feel justified in discussing the means of prevention necessary to lessen the number traveling the chronic route. Early diagnosis and a prompt exploration of the involved bone within twenty-four, forty-eight or even seventy-two hours, in some cases will vastly improve the later course of the cases. Starr and Gallie of Toronto have shown brilliant results from early differential X ray, followed by exploration within forty-eight hours; thus avoiding the more severe manifestations of this destructive and sometimes fatal disease. The cooperation of the profession is imperative to accomplish this. Headway in reducing the mortality and morbidity of other acute surgical conditions, notably appendicitis, intestinal obstructions, perforations, gall bladder disease, etc., was not made until early diagnosis and immediate operations were made, even exploratory operations if necessary to make sure that the patients do not encounter the greater dangers of delay. Now that the acute surgery of the abdomen, and other regions of the body, has been developed to a high degree of efficiency, it is suggested that if we would center our attention on the bones and joints, that there would not be cause for so much complaint from those who have to treat the late results of chronic bone inflammations.

Medication has a place in some of the less active forms of chronic bone inflammation as well as in syphilis, the treatment of which is, of course, specific. Among these remedies first to be mentioned in the ordinary chronic varieties, are arsenic, and phosphorus, and while these remedies have seemed to me to be of value, yet I have been disposed to think that the accompanying rest in bed, the splinting and relief from weight bearing, are factors of equal or greater value.

Chronic osteomyelitis with sequestra and sinuses, requires intelligent surgery, backed by a superior art, to meet the exegencies necessary to effect a cure in the more advanced and extensive cases. This involves the removal of the disease and the obliteration of the cavities and sinuses. Among these methods, so-called saucerization or rendering shallow the cavity or trough, to allow filling by muscle and other tissues, is very commonly successful. The writer has accomplished this in one or two stages as primary procedures and has skin grafted some of these (Jour A. M. A. May 31, 1902.) Occasional cases furnish cavities too large to be filled. He has also made a permanent sinus through the upper end of a cavernous tibia by the use of pedunculated flaps to furnish a skin healed permanent sinus, after the method of Beck for the cure of perisistent empyema.

The writer having assumed that the discharge from an osteomyelitis of years duration has but a very mildly infectious quality to affect the tissues of the host, he has closed the wounds after transferrence of muscler and other tissues to fill the extensive cavities of the condyles of femurs and has succeeded in getting healing either by primary or delayed primary closures which have remained permanent.

A favorite method of filling the trough sometimes representing the whole length of the tibial shaft has been to render the cavity very shallow and the bone quite narrow, after which the laterial skin flaps are undercut to allow their edges to approximate at the bottom of this tibial trough when they are secured by carpet tacks to hold their edges down tightly against the bone, and thus securing early, almost primary closure.

Many years ago at the Orthopedic hospital when many cases of osteomyelitis were under my care, it seemed desirable to avoid frequent changes of dressings and thus avoid the habitual rises of temperature incident thereto; and also to avoid the suffering accompanying the frequent removal of the adherent gauze as was then the custom. Vaseline was mixed with ½ of 1% iodine, melted and poured in warm. This method made the change of dressing free from both pain and temperature elevations. Its use is convenient, desirable and useful in some cases, especially in children. There is, however, a large class of cases in adults in which a more constructive surgical treatment will bring earlier healing, leave less defects, better function and represent results from a more finished and refined surgical art than that from what is simply a prolonged drainage procedure.

In cases in which there are very large cavernous defects, the regeneration of bone by granulation tissue is deficient and falls short of closing these large cavities such as remain after the condyles of the femur have been excavated for the removal of disease involving all of the cancellous bone. It is, therefore, futile to expect their closure by anything short of transplantation of tissue. This method properly applied effects early permanent closures.

—J. P. LORD.

CORRECTION.

Through an oversight, Dr. Frank Conlin's name was omitted from the editorial entitled "The Relation of the Doctor to the Public", which appeared in the June issue of this Journal.

CREIGHTON UNIVERSITY COLLEGE OF MEDICINE GRADUATES AND HOSPITAL ASSIGNMENTS 1923

Ash, W. A., St. Joseph's Hospital, Omaha
Bartek, J. G., St. Joseph's Hospital, Omaha
Condon, J. R., St. Joseph's Hospital, Omaha
Doran, L. W., St. Joseph's Hospital, Omaha
Dorwart, T. Y., St. Joseph's Hospital, Omaha
Hoctor, E. F., St. Joseph's Hospital, Omaha
Rater, D. L., St. Joseph's Hospital, Omaha
Reeder, W. J., St. Joseph's Hospital, Omaha
Schwedhelm, A. J., St. Joseph's Hospital, Omaha
Welbes, M. A., St. Joseph's Hospital, Omaha
Bendlage, G. A., St. Joseph's Hospital, St. Paul, Minn.
McMahon, M. J., St. Joseph's Hospital, St. Paul, Minn.
Beechwood, E. E., St. Mary's Hospital, Detroit, Mich.
Spinharney, L. J., St. Mary's Hospital, Detroit, Mich.
Connor, W. J., St. Elizabeth's Hospital, Lincoln, Nebr.
Duffy, F. N., Cherokee State Hospital, Cherokee, Ia.
Ewing, B. F., Douglas County Hospital, Omaha.
Gianelli, S. A., St. Vincent's Hospital, Portland, Ore.
Growney, L. E., St. Margaret's Hospital, Kansas City, Kan.
Koehler, C. A., St. Margaret's Hospital, Kansas City, Kan.
Mullen, C. J., St. Margaret's Hospital, Kansas City, Kan.
Gregory, W. R., St. Margaret's Hospital, Kansas City, Kan.
Shovlain, F. E., St. Margaret's Hospital, Kansas City, Kan.
Severin, M. J., St. Margaret's Hospital, Kansas City, Kan.
Hombach, L. H., St. Joseph's Hospital, Milwaukee, Wis.
Moriarty, J. T., Kings County Hospital, Seattle, Wash.
Manley, D. J., St. Luke's Hospital, Spokane, Wash.
Manley, M. L., Mercy Hospital, Baltimore, Md.
Nalty, W. C., Mercy Hospital, Davenport, Ia.
Danielsen, A., Mercy Hospital, Council Bluffs, Ia.
Weber, F. N., Mercy Hospital, Council Bluffs, Ia.
Wise, H. C., St. Alexis Hospital, Cleveland, Ohio.
Bierman, A. H., St. Francis Hospital, Wichita, Kan.
Lovely, J. P., Alemeda County Hospital, San Leandro, Calif.
McMahon, E. S., St. James Hospital, Butte, Mont.
Dwyer, H. V., St. Louis City Hospital, St. Louis, Mo.

CLASS OF 1923—UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE.

Atwood, H. S.
Baumgartner, C. J.
Barron, H. M.
Bedwell, I. C.
Bodemer, H. C.
Broyles, Elizabeth
Church, Burt T.
Dahlgren, R. W.
Dau, N. J.
Eller, W. H.
Gentry, W. M.
Goldstone, Joe
Graham, W. W.
Hille, R. W.
Jackson, J. E.
Jensen, A. L.
Judd, W. H.
Kaminsky, J.
Kantor, D. B.
Kohn, F.
Kostal, O. A.
Krahulik, L.
Kretzler, H. H.
Lawyer, P. C.
Leininger, E. F.
Macasa, D. C.
Mnuk, F. J.
Moates, G. H.
Moritz, A. R.
Nelson, C. H.
Nelson, F. A.
Obias, M. P.
Owens, C. A.
Peters, C. A.
Pool, Miriam
Pratt, W. M.
Reils, E. A.
Reinsch, E. R.
Riddell, T. E.
Rogers, J. B.
Rorer, Emily
Ruffolo, H.
Sedlacek, B.
Soberano, F.
Stroy, H. E.
Steinberg, A. A.
Taylor, W. R.
Vance, W. B.
VinSant, V. R.
Waddell, D. Q.
Warner, Sophia
Zulauf, W. C.

HOSPITAL NOTES.

The number of nurses graduated from different hospitals this spring is as follows: University Hospital, 7; St. Joseph's Hospital, 14; Methodist Hospital, 19; Lord Lister Hospital, 3; Clarkson Hospital, 4; St. Catherine's Hospital, 13; and Paxton Memorial Hospital, 8,—all of Omaha: St. Elizabeth's Hospital, Lincoln, 6; and Campbell Hospital, Norfolk, 5.

THE SOCIETIES.

A joint meeting of the **Richardson and Nemaha County Medical Societies** was held at the Community House at Shubert, June 5. The program follows: Resume in Treatment of Sixty-five Gastric Ulcers, Dr. J. Frederick Langdon, Omaha; Interpretation of the Wassermann Reaction in Chronic Syphilis, Dr.

F. W. Heagey, Omaha; Ulta Violet Rays, Practical Uses and Case Reports, Dr. C. L. Hustead, Falls City; Discussion of Abram's Method of Diagnosis and Treatment, Dr. C. A. Lutgen, Auburn.

Quite an original idea was put into practice by Dr. A. E. Gadbois, secretary-treasurer of the Madison County Medical Society, in sending out the call and program for the meeting of the society at Newman Grove, May 8th. The call and program were printed on a Dennison's shipping tag and headed by the slogan "Tag yourself lest you forget."

The **Republican Valley Medical Society** met at McCook, June 1st. About fifty members attended. Features of the meeting were a drive about the city and a banquet at the Keystone Hotel. The program as carried out follows: The Pathologic Gallbladder—Its Relation to Other Neighborhood Pathology, Dr. B. B. Davis, Omaha; Orbital Sarcoma, Dr. C. E. Foote, Hastings; Avenues of Approach to the Functional Nervous Problem, Dr. G. Alex. Young, Omaha; Actinic Treatments, Dr. F. H. McCabe, Cambridge; New Methods in the Treatment of Empyema, Dr. Herbert H. Davis, Omaha.

NOTES ABOUT THE DOCTOR

Dr. W. W. Noyes has moved from Inman to Ceresco to practice medicine.

Dr. G. W. Bartlett, formerly of Scribner, has recently located at Wisner.

Dr. Claude Wills, Casper, Wyoming, visited in Madison and Omaha in early June.

Dr. Bernard V. Kenney, a recent medical graduate, has become associated with Dr. W. L. Crosby, Beemer.

Dr. F. S. Morris, McCool, spent the month of June in Boston in post-graduate study under Dr. Richard Cabot.

Dr. C. C. Barr, Tilden, announces that he has associated with him in the practice of medicine and surgery, Dr. Perry Allerton.

Dr. Homer R. Palmateer, recent interne of the University hospital, Omaha, has become associated with Dr. E. N. Smart, Madison.

Dr. C. C. Barr, Tilden, very happily combined a trip to the fishing resorts of Mountain Lake, Minn., with a visit to the Mayo Clinic in early June.

Dr. Joseph Goldstone, recent graduate of the University of Nebraska College of Medicine takes an interneship at the Hebrew hospital, Baltimore.

Dr. George P. Shidler, York, of the class of '93 Nebraska State University, delivered the annual alumni address at the Cornhusker roundup, June 2.

Dr. and Mrs. Palmer Findley, Omaha, attended the graduation exercises of Princeton college from which their son, Thomas Findley, graduated the middle of June.

Dr. W. L. Crosby and wife, Beemer, left the last days of May for a visit to southern California and incidentally to attend the meeting of the A. M. A. at San Francisco.

Dr. G. H. De May, Shelton, was elected Grand Medical Examiner of the Ancient Order of United Workmen for Nebraska at the annual meeting held at Grand Island in May.

Dr. Frederick H. Milliner, Omaha well known electrician, inventor and physician, has taken his mother on a motor trip that shall include St. Paul, Minneapolis, the Yellowstone Park, the northwest coast and California points.

Dr. C. M. Hyland recently connected with Creighton University College of Medicine, left for New York city June 6, to accept a position as professor of pathology in Bellevue Medical College, with the opening of the college year this fall.

Dr. F. A. Long, Madison, editor of the Nebraska State Medical Journal, returned from Los Angeles early in June, practically recovered from an acute cardio-renal affection which suddenly overcame him in early March. He will resume editorial charge of the Journal with the August number.

NECROLOGICAL

Dr. Joseph T. Steele, Rush Medical College, 1883, a practitioner at Hastings for forty years and dean of the profession of that city died in a hospital at Rochester, Minn., following an operation May 25. Dr. Steele was superintendent of the Ingleside State hospital, from 1899 to 1901. Dr. Steele had always taken a keen interest in political and civic affairs and was prominent in the councils of the democratic party for many years.

Dr. Endell N. Leake, New York Homeopathic Medical College, 1880, a practicing physician at Fremont for thirty-five years, died May 25.

BOOKS RECEIVED.

The Tonsils, Faucial, Lingual, and Pharyngeal. By Harry A. Barnes, M. D. Second Edition. Cloth. Price $5.00. Pp. 217, with illustrations. St. Louis: C. V. Mosby Co., 1923.

Tonsillectomy. By means of the Alveolar Eminence of the Mandible and a Guillotine. By Greenfield Sluder, M. D., F. A. C. S. Cloth. Price $5.00. Pp. 176 with 90 illustrations. St. Louis: C. V. Mosby Co., 1923.

Cerebrospinal Fluid. In Health and in Disease. By Abraham Levinson, B. S., M. D. With a foreword by Ludvig Hektoen, M. D. Cloth. Price $5.00. Pp. 267 with 69 illustrations. St. Louis: C. V. Mosby Co., 1923.

Epidemiology and Public Health. A Text and Reference Book for Physicians, Medical Students and Health Workers. Vol. II. Nutritional Disorders, Alimentary Infections, Percutaneous Infections. By Victor C. Vaughan, M. D., Ll. D., Assisted by Henry F. Vaughan, M. S., Dr., P. H., and George T. Palmer, M. S., Dr., P. H. Cloth. Price $9.00. Pp. 917 with illustrations. St. Louis: C. V. Mosby Co., 1923.

Transactions of the College of Physicians of Philadelphia. Third Series. Vol. XLIV. Cloth. Pp. 567 with illustrations. Philadelphia. 1922

Collected Papers from the Washington University School of Medicine. Vol. I, 1921. Cloth. Price $12.00. Pp. 1079 with 347 illustrations. St. Louis: C. V. Mosby Co., 1923.

Clinics and Collected Papers of St. Elizabeth's Hospital, Richmond, Va. Volume of 1922. Contributed by the Staff. Cloth. Price $7.50. Pp. 560 with illustrations. St. Louis: C. V. Mosby Co., 1923.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, August, 1923. No. 8

CONTENTS

Page

The Nature and Treatment of Interstitial Goiter, A. E. Hertzler, M. D., Ph. D., LL. D., F. A. C. S., 261

Appendicitis or What?, John Mills Mayhew, A. M., M. D., F. A. C. P., 265

Perforated Gastric and Duodenal Ulcer, A. C. Stokes, M. D., F. A. C. S., 267

The Transverse Incision in the Surgery of the Kidney, J. E. Summers, M. D., 273

Some of the Problems in Caring for the Insane, D. G. Griffiths, M. D. Superintendent, Lincoln State Hospital 276

Specific Hypersensitiveness or Allergy as a Common Cause of Illness, W. W. Duke, (Continued from July Number) 279

Syphilis and Syphilis-Like Affections of the Mouth, Alfred Schalek, M. D., 285

Management of Acute Sinus Infections, J. C. Tucker, M. D., 287

Missed Abortion, C. H. Waters, M. D., F. A. C. S., 289

Page

EDITORIALS—

A Lesson in Hospitalization 294

The Nebraska Hospital for the Tuberculous 294

Ventilation 295

The Miracle of Milk 297

The San Francisco Meeting 298

Committee On Public Activities 299

A Tardy Acknowledgement 299

Nebraska Physicians on the Southwest Coast 299

Hygeia 299

Not So Bad for the Cornhusker State 299

The Societies 299

Hospital Notes 299

Notes About the Doctor 300

Hymeneal 300

Necrological 300

THE NATURE AND TREATMENT OF INTERSTITIAL GOITER. *

A. E. Hertzler, M. D., Ph. D., LL. D., F. A. C. S., Kansas City, Mo.

Your chairman has accused me of writing many books. There is just one misfortune in writing books, and that is you can not deny it —much as one might want to. Anybody who talks too much is pretty sure to find himself on the defensive sooner or later. That is somewhat my attitude this morning. My good friend, Bartlett, says when I made my classification of goiter I must have been full of green cheese, his idea being it is entirely too complicated.

My reply is that I have a young friend who classes all animals into two groups "doggies" and "horsies". When he grows older he must extend his biological classification. My prediction is when Bartlett learns more about the pathology of goiter he will be obliged to extend his classification.

What I want to do this morning is just to hit the high lights in a type of goiter that has not been generally recognized, and which Goetsch and I have been working on quite independently and reaching somewhat diverse viewpoints. I feel and Goetsch feels —I am not nearly as certain as Goetsch is, he being younger—that we are on the right track.

My basic argument is that our conclusions must be stated in the language of the patient. It does not make any difference how we ar-

---

*Talk given before the Nebraska State Medical Association, Lincoln, May 16, 1923.

gufy, if we can not persuade the patient to get well all of our fine, 'spiels' get us nowhere. So I feel it is the clinician who has the right of way and the pathologist must get in line or we get nowhere.

The class of patients I have in mind is the type where the chief symptoms are neurotic, rather than the nervous of the adenomatous kind of goiter. They are irritable and nervous, lose sleep, some weight, have some tachycardia, flushing and all that. The neurotists have high-sounding terms which nobody understands. That is the type I have in mind.

Going back to the basis in pathology it consists of this; an increase in the interstitial cells, a flattening of the acinal cells and a change in the colloid. There is a diminution in function in the acinal epithelium judging from its morphology. I believe an atrophy is saying too much.

There is a notable change in the colloid. Goetsch pays no attention to this, but I think it is very vital because in these conditions these changes in the colloid are most constant. It looks as though the albumen had been coagulated with acetic acid. The great difficulty in estimating the degree of interstitial cell increase is that we have no means of knowing which are new cells. We do not know whether it is an increase or simply a persistence of the embryonal state that we see in children four or five years old. A child's thyroid looks very much like a goiter of the type now under consideration. There is this to say, however; among interstitial cells one sees an apparently new formation of glands like as one sees in the adenomatous type, a thing one does not see in the gland of the child. That is the chief argument we have in assuming there is actual increase of the interstitial cells.

When we come to align this type of goiter with other types we must consider the adolescent goiter on one hand, where the change is simply an increase in colloid with no change in it nor in the cells, and an adenoma on the other, in which there is an increase in epithelium, either an increase in gland or a papillary formation of the acinal epithelium. There is likewise a difference between the appearance of the cells in the interstitial type and the secondary type of goiter—the old colloids in patients who undergo a secondary degeneration when toxic symptoms follow after many years. In these there is a degeneration of colloid but it is of a different type, the cells are frankly atrophic and there is no increase of interstitial cells.

Going back to consider the symptomatology more in detail we may note that these patients are most numerous between eighteen and thirty, but by no means limited to this age. The nervousness is usually that of irritability. They are nervous and impatient. You hardly know whether they are normal girls or neurotics. The physical build is sometimes characteristic—usually tall and slender—but most of our girls have that build now, so it is not worth what it used to be. A common complaint is sleeplessness, but our young girls seldom sleep anyway. So this, too, is likely to be of less value than formerly. Sometimes there is surface flushing—the patient has a capillary dilatation. This is probably significant because girls nowadays seldom blush. There is a loss of weight which is quite characteristic—not as great as one finds in the real toxic kind, but averaging around ten or twelve pounds. There is a common complaint of easy fatigue and all that sort of thing, on slight exertion, for everything except possibly dancing. They seldom complain of that.

Speaking of loss of weight, the metabolic rate is not increased. I make this statement despite the fact that one gets all sorts of reports from the laboratory men. I have had reports indicating a very high rate, as high as 204. Obviously there is something wrong with the "can" in such cases and not with the patients.

Eye signs are not commonly present. Occasionally in patients in advanced years, forty or forty-five and beyond, I have seen a positive Graefa. Those are borderline cases, however.

When we come to consider the differential diagnosis, there are two diseases that bother us particularly—tuberculosis and real nervous disease. The marked sense of fatigue and loss of weight makes it easy for the professional internist to diagnose tuberculosis. He ships them away to a tuberculosis resort without particular benefit to the patient. In fact the t. b. climate is likely to aggravate rather than alleviate the disturbance. In these cases the Goetsch test is of real service. It is never typical in tuberculosis. The presence of temperature elevation speaks in favor of tuberculosis.

To differentiate from real neuritis is somewhat more difficult. The typical neurotic usually brings a neurotic mamma with her and the general history is that she never was very much different. In interstitial goiter the patient can usually specify a certain time when this trouble began; "At puberty" or "One time when I caught a severe cold at menstrual period." There is a definite time of onset.

In the second place, they do not enjoy their neurotic state. They want to get well. The typical neurotic is happy to state that various physicians have not been able to do much for her. Her attitude is apt to be a defiance rather than appeal.

In the separation of the interstitial from the other types of goiter there is likely to be more or less overlapping although in the average case there is little difficulty. In the first place, one may have an adolescent goiter where at a certain period the patient becomes nervous, the pulse is sometimes more rapid, and all that, where a simple goiter may have taken on some of the interstitial symptoms. These may quickly subside leaving only the simple goiter. Sometimes in later years the symptoms become more severe, we have definite eye signs and more marked loss of weight. In my experience with this type of cases, one would have to get more serious nervous disturbance—mental depression, and in still rarer cases, a tendency to suicide. The histological picture in these last cases resembles exactly the typical interstitial type. Sometimes these severer cases assume the picture of a typical secondary degenerated goiter. In such cases nothing remains to link them with a past interstitial goiter except the history.

When it comes to treatment, the problem is not so simple as Goetsch thinks it is. He believes these patients should be operated on. My experience has convinced me that operation as a general proposition is not on the right track. I think so particularly because patients who have been operated upon by expert goiter operators, as well as by myself, have not got any better with anything like satisfying regularity. The immediate results are good, I admit, but by the end of five years one suffers many disappointments. There are some cases where I believe operation is in order and that is particularly in those cases in which the gland is large. The reason I think operation does not get the results we get in the adenomatous goiter is evident from a study of the pathology. We have a lessened function—a gland that is not functioning properly in any of its factors. It looks to me like removing a part of a goiter of this kind would be like a man with a stack of German marks; if he threw away three-fourths of them, he would not be any better off with the fourth he had left than when he owned the whole business. It would take just as many of the remaining fourth to buy a dollar. So I think it is bad judgment to throw away three-fourths of what we have.

For the reason that surgical treatment is unsatisfactory, I have given my attention particularly to medical treatment. The patients are nervous and sleepless and all that sort of thing, and I give them bromides. Having found by experience that the iodines will stir up a gland, I give them iodids along with it. That line of treatment I think does more than the surgical treatment but a long period is required, many months to a year or more. This thing is noticeable: a patient with a pulse of 100 to 120, on this treatment reaches a normal pulse quickly. Sometimes in a few weeks it becomes normal. The nervous equilibrium is reached a considerable period later. The disappearance of the thyroid enlargement comes a good deal later still.

I neglected to say during discussion of the symptoms these glands are always small; nearly always uniform, different from the normal gland in being more firm, and in most instances the gland is somewhat tender. That is one of the valuable early signs.

There is one other factor which has gotten me into some trouble with my friends, but I still believe I am right; that is, that all goiter patients, unless it is the typical colloid type, should be considered as sick individuals, and not as patients suffering from a thyroid disease. Too often the surgeon notices the enlargement of the neck and at once concludes the patient is suffering from a thyroid disease. I believe a patient with a goiter should be gone over just as though the prime lesion was not apparent. It is unfortunate a goiter is so easily palpable. We make it a practice in my hospital of going over every goiter patient just as though we did not have the remotest idea of what was wrong. This supposition is often painfully true. Many associated lesions may be found which modify the symptomatology though the thyroid disease may be the chief factor. Being women quite naturally they are subject to disorders of the pelvic organs in general and I believe these are often associated with goiter and play, in many instances, a determining role. We have found there is associated pelvic disease in a surprisingly large number of cases.

One of my friends says my continuous harping on this subject gives him a large pain. I said, "Let's put the cards on the table and see the cause of your pain—whether it is misinformation on my part, or lack of information on yours." My contribution to the controversy is as follows: On the first of January I concluded to re-examine the pelvic organs of the next hundred goiter patients who came to the clinic. Some were new patients, some under treatment. The series began January first and ended January twenty-third. This series, though small, has the advantage of having been examined by a person of ample experience in gynecological surgery, during a space of three weeks. This makes it likely that the standards and viewpoints throughout the series did not vary. In young girls who had never had a pelvic examination, we simply considered the symptomatology. In married patients and those who had been examined elsewhere we investigated the pelvic anatomy. In the girls where we had to depend on the history we classed those as having dysmenorrhoea in whom the menstrual pain was disabling—when they were compelled to go to bed for more than a few hours. Other cases examined are stated in terms of anatomy. Of the 100 cases those with no definite pelvic history were thirteen. Those somewhat uncertain cases, where we depended on the history (young girls if questioned by a doctor without the presence of an older person will sometimes deny pelvic difficulty when it actually exists, as I have found in reinvestigating those classed as normal) and classed as cases of dysmenorrhoea were twenty-six; retroversions, seven; dysmenorrhoea with displacement, ten; with surgical lacerations, fifteen; those who had hemorrhage requiring attention, four; scanty flow with dysmenorrhoea, four; cervical laceration, three; previous pelvic operations, eight; chronic salpingitis, seven; miscellaneous, three, (premature menopause and things like that). The anatomic lesions are such as to justify surgical measures for their correction in the absence of any affection of the thyroid gland.

I believe a patient suffering from any type of goiter and particularly the interstitial type, should be gone over if she has any lesion which in the ordinary course of medical or surgical practice would require treatment. She ought not be denied this because she has a goiter. I believe this is particularly true in the case of disorders of the pelvic organs. It cannot be denied that there is a close association between the thyroid gland and the pelvic organs. If dysmenorrhoea disturbs the patient that is fundamental and an attempt to relieve it should be the first step in treatment. Ordinarily with the relief of pelvic symptoms in many cases the goiter improves. The problem is more difficult when the patient does not complain of pelvic symptoms. Then the surgeon must judge what influence the pelvic organs have on symptoms of which the patient does complain. That the thyroid trouble may be favorably influenced, I have no doubt. What this may accomplish in a preventive way in later years is not known. I have a patient in my charge now who brings this question. She had a retroversion with severe dysmenorrhoea. I operated on her twenty years ago for retroflexion. She had a little goiter, which at that time I regarded as an adolescent goiter with nervousness due to the dysmenorrhoea, but which I would now class as interstitial goiter. She had a pair of little flat ovaries so commonly associated with interstitial goiter, which were not molested. She improved and through these years has had no notable menstrual trouble. Now as she is approaching the menopause she comes in with a typical adenomatous goiter with a moderate degree of toxicity.

In conclusion I would reiterate that the interstitial type of goiter is a compound thing, and one will have to look further than the thyroid gland if he expects to do these patients the best service.

Food Value—One glass of milk equals:

One-half pound of potatoes.

One pound of cabbage.

One and one-half pounds of celery.

Two and one-half ounces of beef.

One and one-half ounces of macaroni.

One ounce of dates.

One large egg.—Medical Summary.

APPENDICITIS OR WHAT?*

John Mills Mayhew, A. M., M. D., F. A. C. P., Lincoln, Nebr.

Having followed a number of so-called chronic appendicitis cases for several years, I have often wondered how many of their symptoms were due to appendiceal trouble and how many to derangement of other organs. Some of these patients had their appendices removed and others did not. Of those undergoing an appendectomy some showed pathology of the appendix and others did not. Of this number some have been free from former symptoms while others were not benefited at all. Of a number not operated upon some have exacerbations of chronic appendiceal symptoms and others are entirely free from them.

This brings to mind the following questions:

(1.) How common is chronic appendicitis?

(2.) How can it be diagnosed?

(3.) When it is falsely diagnosed to what are the pain and other symptoms due?

Since according to Aschoff, "evidence of old inflammatory processes in the appendix are found post-mortem in 75 per cent of all adults" and since Codman, of Boston, in 100 cases of abdominal section for other reasons, found evidences of previous apendiceal inflammation in 71, we can feel sure of finding enough pathology in the appendix three out of four times to justify the claim that the patient has chronic appendicitis. But the real test is; is the patient after operation free from his former symptoms? Oftentimes after appendectomy patients complain of the same symptoms which seemed to require this operation.

The diagnosis then is the most important element. The favored symptoms of chronic appendicitis—rigidity, tenderness and pain at McBurney's point, fever, tenderness by rectal examination, pain on inflation of the colon, leucocytosis, dyspepsia, vomiting and constipation—are also often the principal symptoms of every diseased tissue in this area, but when the foregoing conditions are present it has been the surgical rule to rush in and remove the inoffensive appendix.

The final outcome of such expedients are often heartrending alike to the surgeon and the patient, for they neither correct existing pathology nor bring the desired relief.

With late diagnostic developments there is no excuse for such procedure since accurate determination of most lesions in this region is possible. By the combined use of a careful history, a complete physical examination, modern laboratory methods, the duodenal tube, the cystoscope and Roentgen rays, scientific diagnostic accuracy of diseased condition in this area is developed to a high degree. These must always be used in combination, since the use of any method alone is of little definite value.

CAUSE OF PAIN IN THE RIGHT ABDOMINAL CAVITY

Pain in the right side of the abdomen is due to extrinsic and intrinsic causes.

A few of the extrinsic causes are:

Pneumonia in the right lower lung.
Diaphragmatic pleurisy on the right side.
Lesions in the costal and lumbar vertebrae.
Disease of the right testicle and its ducts.
Tabes.
Lead poisoning.
Allergic conditions.
Pathologic conditions of any organ in the left abdominal cavity.
Sacro-iliac disease.
Back lesions.

The principle intrinsic causes are due to abnormalities of the:

Kidney.
Ureter.
Bladder.
Biliary system.
Female reproductive organs.
Appendix.
Duodenum.
Stomach.
Head of the pancreas.
Cecum.
Ascending colon.
Hepatic flexure.
Transverse colon.

The appendix is usually considered the greatest offender, then the stomach and duodenum, the biliary system, the female reproductive organs and lastly the genitourinary tract. In our opinion a careful complete examination will place the genitourinary tract at the head of this list.

CHRONIC APPENDICITIS

Often the diagnosis of chronic appendicitis can only be arrived at by excluding other diseased organs in the abdominal cavity. The symptoms already mentioned may or may not be present. The only constant symptom is probably tenderness at the base of the appendix by manual pressure and this can be definitely located fluoroscopically after a bismuth meal.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

GASTRIC AND DUODENAL ULCER

The presence of hyperacidity, (Rehfus method) blood in the gastric or duodenal contents, occult blood in the stool, a constant filling defect showing in the gastrogram and relief by the administration of alkalies would usually justify one in making a diagnosis of peptic ulcer.

GALL BLADDER DISEASE

The question whether gallstones are present or not is often difficult to answer. Under the most ideal conditions, stones are shown by the Roentgen ray in about fifty per cent of the cases. Extremely severe colic may occur in cholecystitis alone and be due to a blocking of the cystic duct or common duct by an extension of the inflammation. The general tendency to ascribe severe and paroxysmal colic to calculi and less severe but more prolonged pain to cholecystitis has little real foundation for such a conclusion. Deep tenderness over the gall bladder is, according to Bodenstab, the most constant symptom in both cholelithiasis and cholecystitis. The longer the chronic cholecystitis has existed the more probable gallstones are present. Jaundice after an attack simply points to the fact there is an obstruction along the biliary tract. Lyon believes that he is able to make a diagnosis of disease of the different biliary areas by examination of the bile aspirated through the duodenal tube. We have described this method elsewhere. As our experience increases (we have now made over 3,000 aspirations) we are inclined to agree with him more and more. Palefski has devised a method which aids in the diagnosis by the outlining of the course of the duodenum. We have found this to be a great aid.

TUBOVARIAN DISEASE

From the close relationship between the appendix, the lower right ureter and the right tube and ovary it is easily recognized that a correct diagnosis can only be arrived at after a careful and exacting investigation. Enlargement of the tube or ovary, tenderness on bimanual examination, menstrual disturbances, the enlarged tube and ovary shown by the pneumoperitoneum-pelvic Roentgen examination as practiced at the University of Michigan, the inability to pass gas through the tubes into the peritoneal cavity, a normal filling and emptying painless appendix and negative cystoscopic and urographic findings, all point toward tubovarian abnormalities.

COLON DEFECTS

The filling defect in the colon, as shown by the Roentgen ray must be a constant finding before a diagnosis of colon pathology can be made. We have seen defects of the colon disappear after infections of the biliary tract, of the colon itself, or if the urogenital system were irradiated. So we believe that one Roentgen examination of the large bowel is often misleading. Chronic appendicitis symptoms often disappear when constipation or mucous colitis is relieved.

ABDOMINAL PAIN DUE TO ALLERGY

Abdominal pain, steady or colicky, of all degrees of severity, is the most common abdominal symptom of allergic origin. It often appears shortly after the ingestion of the particular foods to which the individual is hypersensitive. It may be mistaken for an organic lesion, but there is no fever or leucocytosis and the signs of local peritonitis are absent. The causative factor can be discovered by cutaneous tests.

RENAL AND URETERAL CALCULI

The principal symptoms of ureteral and renal calculi are colic, frequent urination and the finding of red blood cells in the urine, but these are also the symptoms of ureteral strictures and angulations. Add to one of these abnormalities of the ureter an infection of the tissue about it and all the classical symptoms of appendicitis may be present.

Add to the renal calculus an infection and with the exception of abnormal bile findings, Palefski's sign and increase of the blood cholesterol all the symptoms of gall bladder disease can be elicited. The urine may contain red blood cells and pus cells but these are often absent except during the attack of colic. When a radio-opaque substance in the uretero-pelvic region casts a shadow upon the film it is usually one of the following:

1. Ureteral calculus.
2. Pelvic calculus.
3. Phlebolith.

4. Calcified lymph gland.
5. Gall stone.
6. Enterolith.

Urographic and cystoscopic methods with the help of the radiographic ureteral catheter are absolutely necessary aids to the Roentgen ray in the differential diagnosis of the foregoing conditions. With the aid of a local anesthetic there is little pain and with careful technique no danger.

If a radio-opaque substance in the abdomen is due to a calculus in the ureter or pelvis it will be in the line of the inserted ureteral catheter, if air or oxygen be injected the shadow will be intensified and surrounded by a dark area and if the ureter and pelvis be filled with a sodium iodid solution the shadow will always be blotted out in the Roentgenograms taken from both the lateral and antero-posterior positions. If the shadow is due to a phlebolith, calcified lymph gland, gall stone or enterolith, the above conditions will not be fulfilled.

URETERAL STRICTURE

Ureteral stricture (like calculi)—especially with infection— will simulate any of the appendiceal symptoms. The diagnosis rests upon the resistance to the ureteral catheter, the pain and "drag" upon withdrawing the catheter and the constricted ureter with a dilated area above as shown by the ureterogram.

MISCELLANEOUS UROGENITAL LESIONS

(1.) Ureteral angulations are clearly outlined by the ureterogram. (2.) In tumors of the renal pelvis the pyelogram shows an encroachment upon .the pelvic area. (3.) In hydronephrosis and pyonephrosis the pyelogram shows a dilated pelvis and a destruction of the calices. In the former the pelvic urine is normal while in the latter pus cells and bacteria are present in large numbers. The function of the affected kidney is decreased in both cases. (4.) In pyelonephritis the pyelogram is normal, the function of the kidney is decreased, pus, albumen and bacteria are present in the pelvic urine. (5.) In hydroureter and pyoureter the ureterogram definitely shows a dilated ureter. The urine from the ureteral area in the former is normal and in the latter contains pus and bacteria. (6.) In nephroptosis the kidney is easily palpated, the urogram gives a clear picture of the sagging kidney and the kinked ureter. In cystitis the bladder, cystoscopically, is inflamed to a greater or lesser degree, the bladder urine contains pus and bacteria, while from the urogenital tract above it is normal.

The truth is just being thrust home as to how frequently urogenital lesions may be the cause of pain in the right side of the abdomen. Hunner believes these conditions are the commonest cause of abdominal symptoms in the female. We must not forget that malignancy and syphilis may attack any organ in this cavity, but the discussion of these would lengthen this paper prohibitively.

CONCLUSIONS

There are many incorrect diagnosis of pathological conditions in the lower right side of the abdomen.

This is due to carelessness, to the lack of taking advantage of modern methods of diagnosis, to using only one method and from viewing all abdominal troubles from the surgical standpoint alone.

In conclusion, I wish to say that only by careful history taking, by complete physical examination, by painstaking laboratory methods, by modern Roentgen ray technique and by taking advantage of the use of diagnostic instruments of precision can abdominal lesions be accurately diagnosed, properly treated, and by this method many unnecessary operations can be prevented.

PERFORATED GASTRIC AND DUODENAL ULCER.*

A. C. Stokes, M. D., F. A. C. S., Omaha, Nebr.

Perforated gastric or duodenal ulcer is a tragic incident in every physician's experience. It is a surgical case from the beginning and demands surgical interference. The results of such surgical interference depend upon two main principles; early intervention and closure of the perforation. While it has only been within recent years that surgeons have recognized this tragedy and have successfully coped with it, yet upon careful investigation of the literature it has surprised me how uniform opinions are as to diagnosis, treatment and results. Yet there remain one or two points upon which we are not all agreed and the subject of this paper will be a discussion of these points.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

The chief points at issue are diagnosis, details in the method of treatment, and results of this treatment. With these three main features in mind we will begin with a discussion of symptoms.

Question 8 of a questionnaire I sent out read as follows: "What do you regard as the four most important symptoms of a perforated gastric or duodenal ulcer in order of their occurrence." To this question we received 52 replies. Pain was placed first in 48 replies, second in 2 and third in 2 replies. The pain was variously described as sudden, sudden and severe, intense, excruciating, extreme, agonizing, excessive, acute, sudden excruciating, and other miscellaneous adjectives.

While this is no doubt true, nevertheless in one of our cases a man was walking along the street when the pain began. He walked several blocks to the office of the physician, walked home, received no medication except advice to lie quiet, and appeared in the hospital the next afternoon, still suffering pain but not what we should say was an excruciating pain. In another case, No. 15 of our series, the pain began slowly, continued getting progressively worse for 48 hours, at which time we saw the case and operated. We believe the pain depends upon the following conditions:

(1.) Whether the ulcer is a slow perforating ulcer which is burrowing its way slowly through advancing adhesive exudate and slowly making an opening into the peritoneal cavity. (2.) Whether it is a posterior ulcer. (In our two cases of posterior perforation excruciating pain was not an outstanding symptom). (3.) When the perforation is on the anterior wall of the stomach or duodenum and the ulcer is of the punched-out type, where a great quantity of intra-intestinal contents is discharged into the free abdominal cavity, the pain is excruciating and sudden. (4.) In at least one of our cases there was a perforation in the duodenum well under the liver in such a location that the perforation was immediately covered by the positive chemiotaxis of the surrounding viscera and the infection was held out of the general peritoneal cavity and the pain might well be described as that resembling gall bladder colic.

The second symptom of this disease is that of abdominal rigidity with a pronounced retraction of the anterior abdominal muscles with a furrow sometimes described transversely across the abdomen at the lower border of the ribs. This rigidity was given as the first symptom of importance in our questionnaire in one case, as the second symptom of importance in 24 cases, as the third symptom of importance in 9 cases, and as the fourth in 8 cases. It was not given as a symptom at all in 10 cases. It was variously described as board-like, intense, muscular spasm, muscle stiffening, intense muscle retraction.

Rigidity is practically a corollary to pain and is nature's effort to hold within bounds the cause of the peritoneal insult. In certain cases, as described above under pain, rigidity is not particularly marked. Rigidity and tenderness go hand in hand and usually under the point of greatest rigidity there is also the greatest tenderness. The scaphoid-shape so often described is, of course, due to the fact that the onset is so sudden that as yet gas has not formed within the intestine in sufficient quantity to press the anterior abdominal muscles forward. This retraction becomes distention after 20 hours or so.

The third symptom most commonly given by the members of this Association is shock, but in only 21 replies out of 52 was shock given as a symptom. Frequently this shock was qualified by saying extreme shock, mild shock, shock and pallor, shock with a rapid pulse, shock with a pulse not much changed. We regard extreme shock as of rather rare occurrence, that it, to the degree of collapse. In the first twelve hours at least the pulse is not generally much increased, not over 100 in our experience, and it is not the type of a shock pulse, namely, thready and small, neither has it the type of a peritoneal pulse, full and bounding. It is rather negative. When the pain is great the collapse is frequently great for a few hours, after which the patient may recover from this collapse and become almost normal, (as happened in our case No. 3).

The next symptom most commonly given is that of tenderness. This symptom was given 14 times out of 52 replies. It was given as localized in 5 replies, general in 3 and not specifically described in 6. It was referred to the epigastrium in 11 replies and to the right iliac fossa in 3.

Vomiting may be regarded as a common symptom. In our own records vomiting is recorded as present in 12 out of 15 cases, but not persistent in any, that is, vomiting occurred once or twice and ceased at least for a time until the vomiting coincident with general peritonitis appeared. Persistent vomiting as a symptom of perforated gastric ulcer is not common, while in that of perforated duodenal ulcer it is much more frequently present.

Miscellaneous symptoms as recorded are, leucocytosis. In our records the leucocyte count did not go above normal in any case where the observation was made in less than 12 hours from the date of perforation. As the peritonitis increases the leucocyte count increases until in a case operated upon 48 hours after perforation, previously mentioned as case No. 15, the leucocyte count was near 30,000. Temperature is frequently subnormal in the first few hours. Dyspnea has been observed in one or two cases and in all late cases after 20 to 24 hours the beginning symptoms of septic peritonitis are present.

It is not our intention in this paper to discuss the pathology or etiology of these perforating gastric ulcers, yet we can not resist a few sentences, namely, that we may perhaps divide them into three classes. (1.) The so-called punched-out perforated gastric ulcer in which an area from the size of a lead pencil to a dime sloughs out through the entire wall of the viscus. (2.) Those cases which perforate slowly through the peritoneum into areas of adhesions around the stomach or duodenum. (3.) Those cases which perforate into the lesser peritoneal sac behind the stomach.

In the record of our cases we observed that 5 cases occurred in the lesser curvature anterior, 8 in the duodenum anterior, and 2 cases posterior, both in the first part of the duodenum.

There was one female in this number, the others were male. The ages varied from 19 years to 50. Two were drinkers, 13 were abstainers. In 12 there was a record of antecedent stomach symptoms such as belching, pain, tenderness and vomiting. In 3 cases there were no antecedent stomach symptoms of which we could get record.

Pneumo-peritoneum has not been used by us except in two cases and in these cases the X-ray did not give such conclusive evidence as some would have us believe.

TREATMENT

As previously stated, from the standpoint of treatment, perforated ulcer is surgical from the beginning, and as soon as the diagnosis is made we believe operation to be mandatory. However, we are convinced that there are a certain number of gastric ulcers that perforate, are walled off, the diagnosis is not made, and the patient recovers, no doubt with a damaged stomach surrounded by perigastric adhesions. In our 15 cases we had 4 deaths. This is too many according to the records given by Dr. Deaver and others writing upon this theme. One case died in 14 hours. This was a case operated upon in the country. One case was operated upon 20 hours after the perforation, and although we only opened and drained, the patient died in one hour from the time of operation. This patient was almost moribund at the time the operation was attempted. Case No. 2 seen 36 hours after the perforation, died in about three days from general peritonitis. Case No. 3 mentioned above as having slow increasing pain, was seen 48 hours after the perforation and operated upon in the country. The man died in two days from general peritonitis. This patient was 49 years of age and the duodenum was very much indurated, and if the induration had been in the stomach we would have said that it was cancer. While this number of deaths seems to be large, nevertheless, this includes all cases which we have seen, some of which were in extremis and three out of the four deaths were operated upon in private houses in the country without proper facilities or proper assistants. Of the hospital cases only one died.

Our method of operation has been the simplest possible. Get in as rapidly as possible, do as little damage to the abdomen as possible, drain properly, close the ulcer in the simplest possible manner, usually, by purse-string invagination and sewing over by a plain Lembert suture of plain catgut. This is frequently reinforced by interrupted suture, the purpose of which is to insure continued and perfect approximation of normal peritoneal surface. We have not resected the ulcer, nor removed any portions of the indurated area about the ulcer. We have not broken up adhesions around the stomach nor disturbed the intra-abdominal viscera by packs, by pulling or by any other means which would wipe off the endothelial layer of the peritoneum.

We have drained all our cases with some form of drainage and some of our cases with much drainage, depending upon locations and time after the perforation. In the most favorable cases we have only left a little drain in the potential space under the gall bladder. This drainage has always been a small split rubber tube. In cases where time longer than 12 hours had elapsed in addition to this drain it has been our custom to pass a drain down into the kidney pouch. Occasionally the area under the liver and above the duodenum is drained. In the posterior cases we have drained the lesser peritoneal cavity both above and below the stomach.

The work of Yates and Richter have been the factors that have inspired this report. I think everyone agrees that we cannot drain the entire peritoneal cavity; nor is there ever need of attempting to do so, because if an infection has become so general that it is necessary to drain the entire cavity, neither drainage nor any other known procedure will suffice to save the patient.

However, every intra-abdominal crisis with which I am aware, has certain areas into which infection naturally flows following either the lines of the force of gravity or the locus minoris resistentia. In anterior perforated gastric ulcer, these spaces are the subphrenic, the space below the gall bladder and the space of Morrison and finally the pelvis. These are the areas where the maximum number of micro-organisms find their lodging places, and into these areas, or some of them, depending on circumstances, drainage should be placed. We feel that drainage so placed produces a via minoris resistentia that no matter what may be said about distant drainage, the local drainage in the local areas where culture media are in abundance are drained. The fluid is removed and the micro-organisms pass out with the fluid and give nature a chance to destroy those remaining by plastic exudate and adhesions. Out of the 52 answers to the questionnaire which I submitted, not one single answer included the statement that they never drained perforated gastric ulcer.

Gastroenterostomy was done by us only once. In answer to the question, "Do you do gastroenterostomy in your cases?" the answer came back as follows: "Never do a gastroenterostomy," 16 replies; "always do a gastroenterostomy," 10 replies; two replies state that they always do a gastroenterostomy if the patient is not in shock; two replies state that they do a gastroenterostomy in from 2 to 5 per cent of the cases; six state they do a gastroenterostomy only for stenosis of the pylorus; one states he does a gastroenterostomy occasionally; one states in 50 per cent of the cases; one in 37 per cent of the cases.

From the above synopsis it is clear that whether or not we shall do a gastroenterostomy in this class of surgical emergencies remains yet somewhat unsettled. The question seems to hover around the point that provided the patient is in good condition a gastroenterostomy is justifiable for the subsequent cure of the ulcer. Six surgeons regard gastroenterostomy as an operation to be reserved for those cases in which either the inflammatory process or the closure of the ulcer produces a stenosis of the pylorus. The question of perigastric adhesions as a condition requiring gastroenterostomy is not mentioned and yet we feel certain that this should be one of the very important points as to whether or not gastroenterostomy should be done, because if the stomach is fixed at any point it cannot and does not properly function. It has not been our aim or purpose, as above stated, to attempt resection of the ulcer in these emergencies. However, in certain cases we think it should be done where the resection does not interfere with the known functions of the stomach.

Ten surgeons always do a gastroenterostomy, yet I am sure that these men if questioned closely would say, "not in shock and not in cases 20 hours after the perforation, and not in cases where they were able to resect the ulcer or in which they believe that no damage had been done to the stomach and a reasonable expectation might be had that the ulcer was cured by the perforation."

Sixteen surgeons say they never do a gastroenterostomy and yet I am convinced that this position would not be defended by them in cases where there was a large indurated area surrounding the ulcer or where there were many adhesions of the stomach and duodenum to adjacent organs, or where the pylorus was too small to allow the proper passage of the food and when the patient could reasonably be expected to withstand the added trauma incident to a gastroenterostomy in the hands of a competent surgeon. The replies seem to shy from the treatment of perforated posterior gastric ulcer.

Our experience has been small but fortunate. In two cases we have passed our finger through the gastrohepatic omentum above the pylorus and evaginated the stomach through the rent, closed the ulcer and did a gastroenterostomy. Both cases recovered and we were fortunate because there were no old adhesions to the posterior wall and we were able rather easily to get to the perforation on the posterior side. In these cases we drained the lesser peritoneal cavity both above the stomach and below it.

Postoperative medical treatment is in my experience much neglected and we believe some form of postoperative treatment of the nature of the Sippy or Lenhartz treatment should be carried out for several weeks following operation.

FINAL RESULTS

In answer to question 6 of the questionnaire regarding whether or not antecedent symptoms of stomach disease were present before the perforation, 13 surgeons answered in 100 per cent of cases; 4 surgeons answered 75 per cent of cases; 1 surgeon answered 90 per cent of cases; 4 surgeons answered 50 per cent of cases and 1 surgeon answered 20 per cent of cases. Five times the answer came back, "nearly all" and 11 times, "no antecedent symptoms".

In answer to question 10 of the questionnaire namely, "Does the perforation and simple closure of the same cure the ulcer?" The question was answered "yes" 22 times. The other answers vary from 50 per cent of cases, 40 per cent of cases to 20 per cent of cases are cured. A negative answer was given eight times, that is 8 surgeons out of about 50 said that perforation of the ulcer did not cure the ulcer in their experience. Twenty-two surgeons out of about fifty state that the ulcer was cured in their experience and the remaining twenty stated that a various per cent were cured.

In our cases, case No. 1 died, case No. 2 operated upon in 1920, a simple closure of a stomach ulcer, is well at this time. Case No. 3, gastric ulcer, is well and running a farm at this time. Case No. 5 died several months after the operation for gastric ulcer of acute tuberculosis. Case No. 6, operated upon in 1920, is entirely recovered and well. Case No. 7 died. Case No. 8, operated upon in 1921, is well. Case No. 9 operated upon in 1922 in May, a letter from his physician states that he is well at this time. Case No. 10 is well at this time. Case No. 11 died. Case No. 12, —his physician states that he is absolutely well and has no sign of ulcer symptoms whatsoever. Case No. 13, one of the first cases operated upon in 1913, answers our letter as follows: "First, do you have any pain in your stomach?" "Some." "Any belching?" "No." "Any distention?" "No." "Any vomiting?" "No." "Have you been compelled to consult a physician for your stomach trouble since the date of operation?" "Yes I have had to be very careful of what I eat since my operation; have had several attacks of acute indigestion." Case No. 14, operated upon in 1921, recovery was complete and he has had no trouble since. Case No. 15 died.

In conclusion, the four most common symptoms indicating perforation of a gastric or duodenal ulcer in order of their percentage of value are, sudden severe pain; rigidity, boardlike and general abdominal tenderness, often localized, occasionally general; and symptoms of collapse or shock. The symptoms of ulcer perforating in the anterior side of the lesser curvature of the stomach are apt to be more classical than those of the duodenum and perforations in the posterior wall are least of all classic. These posterior perforations are often missed entirely until subphrenic abscess appears or general infection in the lesser or greater peritoneal sac is well established.

The treatment most in vogue is simple closure of the ulcer with gastroenterostomy reserved for pyloric stenosis, perigastric adhesions and large indurating ulcers. This only should be attempted at the time of the perforation when the patient is in the best of condition and within 12 hours after the perforation.

Simple closure of a perforated gastric or duodenal ulcer cures the ulcer in about 80 per cent of cases.

The mortality following operation for perforated gastric ulcer increases in direct proportion to the number of hours following the perforation at which the operation is performed.

All operations for perforated gastric or duodenal ulcers should be followed by proper medical treatment for a considerable period of time after the operation is performed.

CASE REPORTS

No. 1—A. B., age 56 years. Was taken ill suddenly about three o'clock in the afternoon of January 3, 1922. I was called at once to see this case. The examining physician had made a diagnosis of acute appendicitis. Careful examination of the abdomen did not give classical symptoms of perforated gastric ulcer. The abdomen was very fat and thick and we were unable to determine much by palpation. There was no characteristic rigidity and the onset of pain was accompanied by vomiting and there was great tenderness in the right side.

We made a diagnosis of acute appendicitis and operated for same. Upon arriving at the appendix we found it perfectly normal. We increased the incision and found a perforating duodenal ulcer. This patient made a good operative recovery, lived five days and died of postoperative pneumonia.

This case was atypical in that it did not have the characteristic history of severe onset with pain and board-like rigidity. The age is also somewhat beyond the period of acute perforating peptic ulcer.

No. 2—J. A., age 25 years. Entered the Wise Memorial Hospital, Nov. 23, 1920, with characteristic history of acute perforating ulcer. Upon operation we found a punched-out hole in the lesser curvature of the stomach which was closed.

Patient made an uninterrupted recovery, and so far as we know is well at this time.

No. 3—J. M. Operated upon in 1913; history was as follows:

I was called on the long distance 'phone by a physician who recited the following symptoms regarding the patient: The man was picking corn in a field when he was suddenly seized with an acute abdominal pain. His pulse was very rapid and in great prostration. I said to the physician over the telephone, "Acute perforated gastric ulcer." He said "No, probably appendicitis." Since the man was in great shock the physician requested that I come out to his place. I arrived there about ten o'clock that night and found the patient without pain, with a perfectly flexible abdomen, with a normal pulse and temperature. This was about eight hours after his symptoms. I was so surprised to find the man in this condition that I told him he probably had had a sharp attack of appendicitis which had passed over, and stated further that I did not think he would need an operation. Patient replied that he did not want another attack like that and requested that his appendix be taken out, so we prepared to do so in the farmhouse.

Opening the abdomen in the appendiceal region, we found the stomach contents. It was then necessary to make another incision over the stomach, which was done and we found a perforation in the lesser curvature. All the help present was a physician and a nurse beside myself.

Upon attempting to get my catgut which was supposed to have been sterilized, we found that the nurse had boiled the catgut and, therefore, had none with which to sew up the perforation. However, after obtaining some linen from a spool which the lady had in the house and boiling it, we closed the perforation, putting a drain in the appendiceal region and stomach region. The patient made an absolutely uninterrupted recovery, and is to my positive knowledge well and free from all symptoms at this time.

No. 4—D. S., age 26 years. Perforated gastric ulcer; diagnosis made before operation. Operated upon at the Wise Memorial Hospital July 26, 1922. Had pain, extreme rigidity and tenderness. Upon operation we found an opening in the duodenum which we closed. Patient made an operative recovery but finally died of acute tuberculosis about six weeks after the operation.

No. 5—R. M., age 42 years. Perforation in the duodenum well under the liver. Symptoms were mild, scarcely any rigidity, but extreme pain and vomiting. Diagnosis made before operation. Perforation closed with recovery.

No. 6—F. Mc., age 48 years. Admitted to the University Hospital May 15, 1921. Had pain, loss of appetite and vomiting 18 hours before taken to the hospital. Admitted to the medical service and treated for 36 hours. Referred to the surgeon. Posterior gastroenterostomy was done. Patient died May 23, 1921.

No. 7.—G. G., age 20 years. Admitted to the University Hospital on August 2, 1921. Complained of sudden pain about three o'clock on August 1st while sleeping. Examination at three o'clock on August 2nd, twelve hours after the excruciating pain showed a colored man in great pain, constant effort at vomiting, extreme rigidity and tenderness over the abdomen. Pre-operative diagnosis: Proably perforated gastric ulcer. Operation done, opening cauterized and invaginated. Recovery complete and patient is, so far as we know, well at this time.

No. 8—G. A., age 63 years. Had stomach trouble for about seven or eight years. On May 8th, 1922, at 5:00 p. m. was lying on a lounge at home when he has seized by a sudden sharp pain. Was sent at once to the University Hospital, Omaha. Operated upon about 11:00 p. m. that evening. Posterior gastroenterostomy was done. Patient recovered and is to our knowledge, well at the present time.

No. 9—W. B., age 28 years. Was suddenly seized with an acute abdominal pain while walking down the street on the evening of November 9, 1921. Became nauseated and vomited. The pain began in the epigastrium and radiated down to McBurney's point. Patient was sent to bed by a local physician who applied an ice-bag. The following morning was nauseated and vomited, the pain and tenderness gradually increasing. Reached the University Hospital about three o'clock in the afternoon. Pre-operative diagnosis: Perforated gastric or duodenal ulcer. Operated upon patient at 4:55 p. m., 21 hours after the perforation. Abdomen opened, duodenal ulcer invaginated and closed. Drainage put above and below the stomach and down to the iliac fossa, and a puncture made over the pubis and pelvic drain inserted. Patient had a stormy convalescence, but an operative recovery, and left the hospital in about two weeks, only to return again with excruciating pain in the stomach and some temperature. He was treated medically for several months without any result. Following this a gastroenterostomy seemed necessary which was done, and from which operation patient made a symptomatic recovery, and is so far as we know, free from his symptoms at this time.

No. 10—Mrs. J. E., age 50 years. Had history of ulcer of about three years period, but there had been no diagnosis made. Was under observation of local physician about three weeks before the perforation, and a tentative diagnosis of ulcer was made; however, the physician did not insist on the patient going to bed. The perforation took place in the afternoon after drinking a glass of soda water. No positive diagnosis was made and operation was not done until the next day near noon, about 20 hours after the perforation. Operation was done June 6, 1914. Patient went to the bad on the table and died an hour after getting her to bed.

No. 11—C. L., age 40 years. Had no definite symptoms of ulcer, but gave a history of some definite pain some time before the perforation which was not of severe enough character to induce him to consult a doctor. He was seized with a sudden, severe pain on going home from town about nine o'clock in the evening. Local physician saw him about an hour later but did not think he had a perforated peptic ulcer. Patient's temperature and pulse were normal, there was some abdominal rigidity. Do not believe there was any vomiting. Operation on November 27, 1921, at Oakland. The ulcer was located near the juncture of the pylorus-duodenum. Patient had a slight fever for about a week with a little vomiting, after which he made an uneventful recovery on a Sippey diet. He has had no recurrence of symptoms up to the present date.

No. 12—J. K., age 23 years. Operation in 1913. Gave no history of previous stomach trouble. Sudden pain in the abdomen and great prostration. Rapid pulse and profuse perspiration. Carefully examined by us—diagnosis of perforated appendix. Operated upon for appendicitis and upon opening the abdomen in the region of the appendix we found stomach contents present. The second incision over the stomach found a perforated ulcer in the lesser curvature which was closed with drainage. Patient made an uninterrupted recovery. In reply to our letter dated October 25th, 1922, he submitted the following answers to our questions: "Do you have any pain in your stomach?" "Some." "Any belching?" "No." "Any distention?" "No." "Vomiting?" "No." "Have you been compelled to consult a physician for your stomach symptoms since the date of the operation?" "Yes; have had to be very careful of what I eat. Have had several attacks of acute indigestion."

No. 13—A. M. Findings at operation were as follows: Small perforation in the first part of the duodenum on its superior surface. Large indurated area about the duodenum with free fluid in the abdomen. Ulcer area excised and closed by a purse-string suture and this closed by Lembert sutures. Operation performed at Wise Memorial Hospital, Omaha, October 14th, 1921. Recovery was complete and uninterrupted. No record of any trouble since operation.

No. 14—J. O., age 49 years. Had had various symptoms of stomach trouble for a long time which had been diagnosed as gall bladder disease. He was seized with an acute pain on the morning of November 12, 1921, and operated upon the evening of November, 13th, 1921, making a period between the onset of the disease and the operation of about 36 hours. Patient died in five days from general peritonitis. Remarks: Three peculiar features about this case; first, the age of the patient which made one think probably of a degenerating cancer; second, the period of time between the onset and the operation; third, the fact that this case in the beginning was confused with gall bladder disease which led one to believe that it was a case of typical chronic ulcer of the duodenum with perforation. No autopsy was obtained.

THE TRANSVERSE INCISION IN THE SURGERY OF THE KIDNEY*.

J. E. Summers, M. D., Omaha.

It occasionally happens that tumors of the kidney, whether malignant, tuberculous, or cystic, such as hydronephrosis, are so large, encroaching well over towards the vertebral column, that their retroperitioneal removal by the usual lumbar incision, however much prolonged downwards, is fraught with great difficulty and at times with grave danger.

It may be conceded that small tumors of the kidney, of all types, are best removed by a retroperitoneal lumbar incision. If the tumor is very large it is the most general practice to resort to the abdominal transperitoneal incision along the linia semilunaris. This approach, as Mr. Henry Morris says, allows of an examination of the connections of the tumor. However, this most experienced man in the surgery of the kidney, employed in addition to his abdominal incision a retroperitoneal lumbar incision. Morris says: (1) The anterior incision "enables the surgeon to make a wide exploration before beginning the separation of the kidney and the tumor from their connection. (2) It gives the opportunity of feeling and inspecting the other organs, and the mesentery and peritoneum, and so of detecting any early and unsuspected secondary growths. (3) The posterior incision allows of the posterior, the upper, lower, and outer connections of the tumor being detached whilst the tumor itself is being pressed towards the spinal column, instead of the great vessels being dragged and forcibly pulled away from them, as happens when this detachment is made through an anterior wound. It thus diminishes the risk of injury to the great vessels. (4) The delivery of the tumor through the anterior incision is very greatly facilitated by one hand of the surgeon in the posterior wound. (5) The pedicle can be more precisely manipulated than through either wound alone. (6) The lumbar wound affords the best means of draining the space from which the tumor has been extracted."

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

Louis Bazy (Paris), in an article entitled Subperitoneal Nephrectomy by Transverse Anterior Incision, published in La Presse Medical, March 7, 1914, advocated this method, making in substance, the following arguments: It must not be denied that nephrectomy is at times a difficult procedure, the security of the ligation of the pedicle is of primary importance, therefore an easy access on the hilus of the kidney is indisputable. In certain instances this access is not obtainable through the commonly employed posterior lumbar incision, and in addition, the narrow outlet between the twelfth rib and the iliac crest does not admit of the delivery of the tumor.

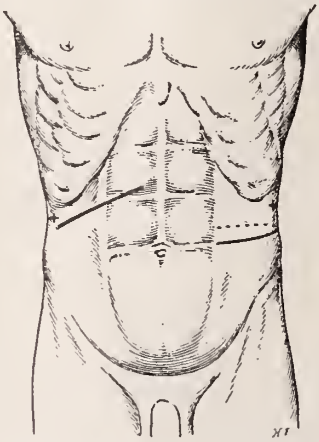


Figure 1. Anterior extremity of the eleventh rib. At the left of the figure, the proposed incision, transverse or very slightly oblique following the line, but entirely situated on the anterior wall of the abdomen; at the right of the figure the incision of Pean, from the external border of the rectus muscle to the external border of the sacro lumbar mass, at the height of the umbilicus.

In order to overcome these difficulties and still be able to carry out a retroperitoneal technique avoiding the dangers of the transperitoneal route, Bazy advocates an incision and technique which in my opinion have great merit, and are worthy of greater application than would appear from the literature to have been the practice. The patient can be placed (1) in the usual dorsal position, (2) in hyperextension of the trunk such as is commonly done in operation upon the gall-bladder and gall-ducts; (3) in the dorso-lateral position as usually employed in operations upon the kidney. The incision is transverse, sometimes somewhat oblique, commencing a little below and behind the palpable end of the eleventh rib, and is directed towards the median line, which it does not reach however, so that it ends about midway between the umbilicus and the ensiform cartilage. The incision should be carried far enough posteriorly so as to easily reach the reflection of the peritoneal pouch. In making the incision it should be carried first posteriorly to the fascia transversalis which having been reached, with the finger as a guide, the muscles can be divided towards and to the median end. The muscles are divided plane by plane, the nerves (intercostal) run between the internal oblique and the transversalis, and can be seen and avoided. Carried out in this way there is no risk of opening the peritoneal cavity. Practically in the majority of instances the anterior extremity of the eleventh rib points as a finger towards the pedicle of the kidney which is always found in front of the first lumbar vertebra, the umbilicus may be over either the third or fourth lumbar vertebra. For these reasons, in order to reach the kidney pedicle, the incision should be directed largely above the umbilicus, and the point about midway between the umbilicus and ensiform cartilage affords the best approach.

In a very recent report, Dec. 1922, made by Louis Bazy to the Society of Surgery of Paris, upon his personal experiences and those of several colleagues, in the employment of the transverse incision in the surgery of the kidney, a further enlightenment of the procedure is given. In this report Dr. Combier and Murad say that the majority of surgeons employ the lumbar incision introduced by Guyon. The lumbar incision leads to the convex border and lower pole of the kidney. Access to the superior pole is difficult and it is disengaged by sense of touch alone; the hand is forced deeply into the wound and the freeing of the pole and its bringing down is a "veritable luxation." True, the costoiliac space may be enlarged by resecting the twelfth and eleventh ribs, thus facilitating manipulations. The reporters emphasize the fact that by the lumbar route the pedicle is deeply situated and in certain pathological conditions it is dangerous to make too great traction upon it, in fact, it is sometimes the part of wisdom not to attempt its ligation but to rely upon properly placed clamps to

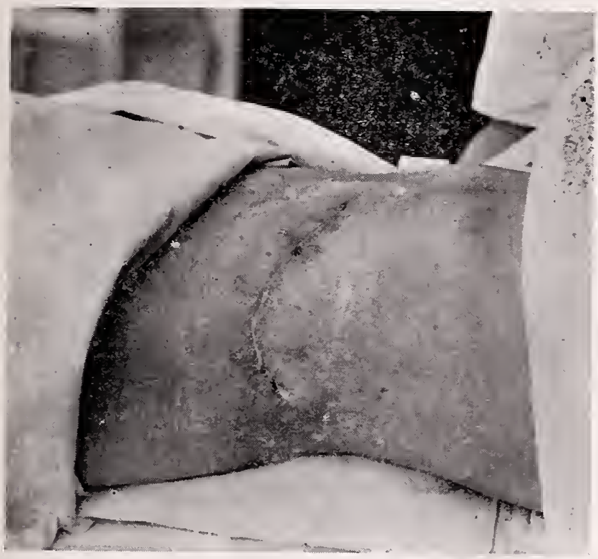


Figure 2. Healed incision in case operated upon by the writer; showing the beginning of the incision at the lower border of the eleventh rib, and its termination midway between the umbilicus and ensiform cartilage.

assure its security. Although Pean was the first surgeon to advocate a transverse incision in the surgery of the kidney, Bazy modified and improved the method. He says, "It conducts the operator directly onto the body of the kidney, it readily admits of disengaging the upper pole of the kidney with a great deal more simplicity and security, and more often under control of the eye, than does the lumbar incision." The incision allows of a direct frontal approach to the pedicle which is exposed, thus admitting of securing it before the kidney has been disengaged from its bed. Tumors may be freed from adhesion to the inferior vena cava and aorta, and glandular invasion may be removed, all under direct vision. The incision can be made into a laparotomy on the left side for the removal of the spleen, or for operation on the splenic flexure of the colon; carried across the right side, as a transverse incision, advocated by some, the organs in the right hypochondrium may be attacked. In the treatment of traumatisms to the kidney the transverse incision is an advantage. In the majority of instances of operations upon the kidney where there is no very marked increase in enlargement of the organ the usual posterior incision would seem to be preferable; however,Bazy and his followers have extended the field of operative indications in which they advocate the employment of the transverse incision so that in the forty-three interventions in which he has employed it there were:

Nephrectomies for tuberculous kidney	17
Nephrectomies for pyonephrosis	3
Nephrectomies for cancer	3
Nephrectomies for polycystic kidney	2
Pyelotomies for calculi	10
Nephrectomy	1
Hydronephrosis (uretero-pyelonostomy)	1
Nephrectomies, secondary	3
Wounds of the kidney (nephrectomy)	1
Nephropexy	1
Nephrectomy for painful atrophic kidney with enormous perinephritis	1
	43

My experience with the operation of nephrectomy dates back to 1892 when I did the first operation of this kind done in Nebraska. The case, a tuberculous kidney, was reported, and the patient, a woman, has remained well to date. She is a resident of Broken Bow. In May 1900 I did a successful nephrectomy upon a two-year-old girl—the youngest case recorded—a tuberculous kidney with a double ureter. The patient is now a healthy married woman living in Callaway. Since 1892, I have done many nephrectomies, doing several every year, and the operations have all, with two exceptions, been done by the lumbar incision. One of the exceptions was in an instance where, the patient suffering from a very large left-sided hydronephrosis, I employed the transperitoneal route. The operation was a very difficult one,—the patient died. This is the only operative death in my experience in nephrectomy. A very recent case, a woman thirty-six years of age, sent me by Dr. Lacey of Cheyenne, Wyo., had a very large hydronephrotic left kidney; the tumor reached well over to the median line and was too large to be removed by the usual lumbar incision. Instead of resorting to the transperitoneal route, the next alternative, I decided to try the transverse incision of Bazy. The operation was carried out according to his recommendations which I have described, and was a most satisfactory procedure, the patient making a good recovery. From my experience in doing nephrectomies embracing practically all of the known pathological indications, I am convinced that the extraperitoneal transverse incision is a valuable procedure and admits of a safer technic than does the transperitoneal or the ileocostal incision commonly employed when the tumor is a large one.

SOME OF THE PROBLEMS IN CARING FOR THE INSANE.*

D. G. Griffiths, M. D. Superintendent, Lincoln State Hospital, Lincoln, Nebr.

In treating this subject we are going to deal only with the sociological aspect, and not with the scientific treatment and classification.

Although the medical profession has made wonderful strides along scientific lines and the discovery of the pathology of diseased conditions; yet there is something which causes fifty thousand young people, yearly, to become afflicted with a condition known as dementia praecox, and still, as far as we know, there is no pathological cause for it. By tracing their history we believe that we have definite hereditary causes in seventy-five to eighty per cent of these cases. Some doctors, whom it seems to me are radical, have gone so far as to say that all cases of insanity are hereditary. On the other hand, if we stop for a moment to think, we would realize that there is hardly a family tree in which, during the last three or four generations, we can not find some trace of mental derangement or deficiency; hence, it seems to us that there must be some pathological cause for dementia praecox that has never been discovered, because there is a chain of symptoms, such as the drawn-in personality, the cold, clammy skin, the general attitude and appearance of the patient, etc., which makes the picture such that we might expect a pathological condition to exist. Of course, we are taking into consideration, in all these cases, those who have an infection in any part of the body, and this may in turn cause a diseased mind. However, if we will but stop to think, we know of thousands of infections, and many of them bad, that are brought daily to the attention of the medical profession, and still the mind is not deranged by them; hence, we can not call an infection of some part of the body a cause for mental disorder. In many instances it is probably an exciting cause, when the underlying cause is present.

As to the treatment of the insane, this is taken up and is reflected in the whole management of a hospital for the insane. In the first place, beginning when the patient is first noticed as acting queerly, by friends or relatives or the public, and not reacting to his surroundings properly, and after it is once concluded by any of these friends or relatives that the man or woman is insane, just at that moment they begin to keep the true facts from him, to deceive him as to their intent, and to tell him that he is sick in some other way. After he is committed to a hospital for the insane, either private or state, which, of course, all cases usually are, they will go to almost any extreme in trying to accomplish the feat of arriving at the hospital door with this patient ignorant of his true condition, instead of telling him the truth frankly and explaining everything to him. For instance, the doctor, just at that time, should tell this patient frankly that he is suffering from a delusion, or something he thinks is true when it is not and that if he does not do as he wants him to do, and do what he knows is best for him, he will restrain him in such a way that he will be unable to help himself. We believe if the friends, the physician, the relatives, and others about a patient, from the time that he becomes afflicted with mental trouble, would be frank and firm with him the same as they would with a child if he were suffering from diphtheria or any other disease, they would be more successful and would possibly be able to check these mental aberrations sooner in many cases. But, instead of that, the relatives, and sometimes sheriffs, will bring the patient into the hospital and rush in ahead of him to tell us to keep quiet and not let the patient know that he has been deceived by them, because they have told him that they were taking him to a large hotel or something of that sort. The first question to these people usually is, "Do you suppose that this patient is not going to find out that he has been brought to the hospital for the insane?" We then ask the patient if he thinks he is insane, and we tell him frankly that he is in the Lincoln State Hospital, that he is here because he has been adjudged insane, and we are going to detain him here until he has improved. Then the patient at once blames the relatives or friends, or whoever has deceived him. We lose sight of the fact that a patient may be very insane and still have an insight into what is told him and remember it, and hold the grudge against the relatives for deceiving him, and not being frank as to what was occurring.

As to the public's idea of the treatment of patients in a hospital for the insane, it is surprising to know how many people there are in this day and age, who go through the hospital, and after they have seen the patients who are suffering from the most serious delusions, and, in fact, all the most difficult cases that we have in the hospital, will ask to be shown the violent ward, or those in padded rooms, or something equally ridiculous; and we are sorry to say that such questions are not confined to the ignorant and to the people who do not read or should not be expected to know concerning these things; but are asked by many who are well informed on other subjects and people that would surprise you, indeed, to have them ask such questions. When we tell them that they have seen the most insane patients and the most dangerous that we have in the hospital, we think many of them hardly believe that we are telling them the truth. It seems that the public, and Americans as a whole, are looking for something that causes them excitement or gives them a thrill, so to speak, and if we have a patient who is violent or troublesome, this is certainly the patient whom they want to see.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

We should all remember that many insane persons are just over the line and are able to be relieved and even restored entirely to their normal health, or to be restored to a point where they may live useful and very happy and contented lives for many years, under supervision; yet, we have many people bringing patients to the hospital and telling us that they have fought against this for a number of months or years, and that finally they had to submit to this and let their relatives or friends be brought to the Lincoln State Hospital, or some other hospital for the insane. Our reply to these people is that it is too bad that any of their relatives are insane, but it is a good thing that the state maintains a place to care for those who are so afflicted. The sad part is that their relatives are insane, but it is a blessing that they can bring them here when all else fails. It is a fact that we get a great many of these patients who have been operated on or have been in hospitals for many months and it seems they have had every possible thing done for them. Unfortunately, their family and relatives spent all the money that they could procure and finally brought them to us, feeling depressed because it had to be done. After they have given up hope that the patient can ever be cured, they leave him alone at the hospital, for a time, and it is not an uncommon thing that after a little while the patient begins to improve, under surveillance. Many of these patients soon begin to fully realize that the law of the state has them in hand, that they can not be released unless the machinery of the law so disposes, and that they are out of the hands of these sympathizing and over zealous relatives; and they begin immediately, more for this reason than for any other, to improve, and many times they come back to normal or near normal.

We have one hundred twenty-five men working upon the outside in the different departments of the hospital, in the dairy, on the farm, in the garden, on the lawn, in the bakery, kitchen, laundry and in all the activities of the hospital. We also have one hundred ten women in these different departments, including the sewing room, art room, etc. I am simply saying this because we are often asked whether these patients just sit around, enjoy no exercise, lead a dull, daily life, and have nothing to interest them. After you exclude these patients, which is about one-fourth, or very near it, we still have the house-work to do, that is, bed making, the wards to sweep the seven dining rooms to keep up three times a day, etc., so you can readily see that there is a task to do for all who are able to work. It is a mode of treatment that all patients who are at all able physically and mentally should perform some task, to exercise daily, to go to bed regularly, to get up regularly, to have their meals regularly; and these things constitute a large part of the treatment and are some of the most important things in the treatment of those who are mentally afflicted.

It is no easy task to employ attendants and nurses who at all times will use the right attitude toward patients. It should be one of kindness, and the nurses should not take the attitude of being the bosses, but rather should ask the patients to assist in doing this work, and the patients are usually glad to help. It is not always possible to have the persons who come in direct daily contact with the patients to be exactly what you would like; however, it is surprising how much tact is shown by many of these people who have had experience in caring for the insane for a few years. It is learned by them that they can get along with the insane with very little trouble by using a certain amount of tact, firmness, and the proper attitude toward them; however, no patients are forced to work; they are only asked to do it, and if they refuse they are allowed to sit in the ward and usually in a few days they are glad to be busy at some little task.

During the year 1922, we admitted 261 insane patients. We discharged 109. We treated 93 dipsomaniacs and discharged 90 as cured; hence, about 200 patients left the Lincoln State Hospital as cured during the time from January 1, 1922 to January 1, 1923. We are giving you these figures to show you that the state hospitals as now conducted are not asylums, but in reality, hospitals for the insane; hence, the official titles of the hospitals in Nebraska are: Lincoln State Hospital, Lincoln; Hastings State Hospital, Hastings, and Norfolk State Hospital, Norfolk. In addition to the number that have gone out, we are able to make the lives of many of the patients who are not able to go upon the outside again, happier by improving the environment of the hospital; and by making them more contented they become useful men and women in the hospital community. We have our dances for the patients once a week, and religious service every Sunday morning in the chapel. We have the daily newspapers and magazines which are supplied by the State Library Commission; hence, many of these patients lead comparatively happy and prosperous lives, and when we speak of prosperous lives for them, we mean they are prosperous because they help to care for others who have lost their mentality completely, and are more unfortunate than they themselves. It seems to us that life that has been spent in the hospital community, helping to care for those who become so mentally and physically deteriorated that they can not even help themselves, is after all a life spent in service and not in vain.

Now, although we feel that the Lincoln State Hospital, as well as other state hospitals, is doing wonderful work, and, as we have shown you in this paper, we do restore people to normalcy, it could and should be improved, and the way that we would improve this would be to have a receiving hospital for both men and women who are committed to this hospital. We would have it conducted similar to a general hospital, with the exception that we would receive mental cases only. It should be equipped with the X-ray, the eye, ear, nose and throat room, the dental office, the different physicians' offices, and, in fact, with every division of medicine that is known at this time. When a patient is admitted to the hospital, he should be assigned to this receiving building. After we had the building we should have it thoroughly manned with our resident physicians; but in addition we should have a visiting staff—each man a specialist in his line—so that after a patient had been in this hospital sixty days we would know that anything that might be bearing on the cause of his or her mental break-down had been relieved. We imagine some people will say that this is going too far for the state, but we do not believe so. We are convinced that no one, private physicians, or private hospitals, can treat mental diseases more successfully than the state, because we are convinced that when the patients are taken before an insanity board and committed to the state hospital and brought there, either by relatives or the sheriff, and are told that they have been committed by due process of law—because they are insane or have some mental trouble —and can not be paroled or discharged until those in charge decide that they are well, or at least better—and the relatives can have no influence, one way or another over patients in the hospital, we thoroughly believe that the psychological effect of this procedure in many cases, is the entering wedge to the regeneration of their insight, and is one of the things that begins to bring them back to normal more rapidly than anything else.

Looking at this from a financial standpoint, we believe that the state would be fully repaid in the increased amount of reclaiming of those mentally afflicted and by putting them back to earning their own livelihood; and we believe that the expense incurred by the state would at once come back to the tax payers themselves. We believe there is no tax payer in the State of Nebraska who would not be glad to give fifty cents a year out of his own pocket to see this condition brought about, and for fifty cents a year from each person in the State of Nebraska there could be just such an arrangement at each and every hospital for the insane in the state today; and we believe that when looked upon by the people as a whole, this could be done and there should be no time lost in making efficient the machinery to reclaim more people who are mentally afflicted.

We simply make this plea for those who are mentally afflicted who should be taken in charge by the state. We hope to see the day, and be believe that we will in the not far distant future, when we will be reclaiming more of the mentally afflicted; when the causes of some of these mental troubles, especially dementia praecox will become clearer to us.

We note a newspaper report concerning a remark made by an alienist in Canada, where he makes the startling statement that it is his opinion that in twenty-five years more than one-half of the people will be insane. He gives as a cause that we are living too fast, that when we work, we work like mad; when we play, we play like mad; and anything else that we do, we do like mad. We do not believe that this is true; but, we do believe and know, in fact, that the influence and heredity generated in the race each year by the feeble-minded and those mentally deficient the United States over, is placing a greater handicap, year after year upon the people of the United States of America.

SPECIFIC HYPERSENSITIVENESS OR ALLERGY AS A COMMON CAUSE OF ILLNESS.

By W. W. Duke, Kansas City, Mo.

(Continued from July Number)

(Note:—Through an error in putting together the forms of the July number, that part of Dr. Duke's article appearing on pages 246 and 247 is not in proper sequence. In reading the completed article the reader should pass from the bottom of page 245 to this page.—Editor.)

Insects: It is not uncommon for patients and friends to remark that they are made ill by the bites of certain insects. Dr. Canby Robinson mentioned the case of a patient who had a large area of angioneurotic oedema as a result of a hornet's sting. An associate of mine, following insect bite (probably mosquito) had not only generalized urticaria and angioneurotic oedema, but also an attack of intestinal colic which rendered him very ill for twenty-four hours. He has had milder attacks on numerous occasions following mosquito bites. This source of allergy is very real and is not extremely rare.

Hypodermatic Injections: Hypodermatic injections of vaccine, therapeutic sera, pollen extract, salvarsan, and other drugs frequently give rise to phenomena of allergy which may be very severe; in fact, in rare instances even fatal. Before administering horse serum therapeutically, one should always inquire for a history of hay fever, asthma, and urticaria and if possible, make an intracutaneous test with 0.01 cc. of horse serum. The writer once saw in consultation a patient who had been subject to asthma (probably horse asthma) who had been given horse serum for the first time in her life. A severe chill with immediate complete collapse and death was the result. One should always warn patients who have horse sensitiveness against the use of horse serum unless they are tested intracutaneously with horse serum just before its administration. This warning saved a patient of mine a prophylactic dose of antitoxin which almost surely would have proven fatal. As mentioned by Coca, it is the first dose of serum which one need fear—not the second dose. If a patient tolerates one dose, there is reason to believe he will tolerate a second. A patient very sensitive to horse dander, whom we have observed, tolerated a dose of antitoxin without ill effect. Intracutaneous tests with horse serum, however, were negative.

It is also a justifiable precaution to inquire concerning symptoms of allergy and concerning a family history of allergy in patients who are to have salvarsan therapy. The only very alarming reaction we have had from salvarsan was in a patient who recently had a few hives as a result of eating strawberries. His previous doses had caused no trouble whatever.

CONTRIBUTORY CAUSES.

Physical Factors: While hypersensitiveness to alien matter is primarily responsible for symptoms of allergy, other factors may play contributory roles and determine the severity and location of the symptoms. Some of these factors are the mechanical, chemical, odorific, and thermal mentioned by Walker in relation to hay fever and asthma. To these may be added reflexes, functional activity and other factors. The influence of these factors is noticed by the majority of sensitive patients. For example, urticaria in a sensitive individual may be brought out by rubbing the skin, or by pressure on the skin, or by sweating. The rubbing of the eye-lid may bring out a large area of angioneurotic oedema. The hypodermatic injection of some harmless substance may give rise to a large oedematous area and subcutaneous hemorrhage. I have known a mercury inunction to cause the appearance of swelling and hemorrhage into the skin, which we feared would become gangrenous.

Patients who have dyspepsia and abdominal pain as a result of alimentary allergy, are almost invariably made worse by the eating of rough foods, such as nuts or lettuce; by the ingestion of irritating foods such as pepper and mustard; and by the ingestion of stimulating foods, such as alcohol, coffee, or salt.

Pollen asthma is usually aggravated by the inhalation of dust or flowers, the essential oils or perfumes, by changes in temperature, changes in barometric pressure, and by the quantity of moisture in the air. Asthma may be either relieved or made worse by a reflex caused by the eating of a meal or by vomiting or by evacuation of the bowels. Asthma is almost invariably made worse by physical exertion.

The above contributory factors are mentioned and emphasized because they often deceive both patient and physician. Each may be inclined to blame secondary factors for the discomfort rather than the primary fundamental cause, e. g., hypersensitiveness. For example, patients with pollen asthma will almost invariably blame wind, dust, smoke, vapors, exposure to cold, or changes in barometric pressure for their discomfort, even though they realize that wind, dust, and changes in barometric pressure may have no perceptible ill effect upon them except during the pollen season.

Pathological Factors: Under contributory causes of allergy should be mentioned infections and functional or organic disease. Patients often state that their illness started soon after an infectious disease or an operation, especially intranasal operations.

Alimentary allergy is more common in individuals who have definite pathology in the alimentary tract or its appendages (such as ulcer, gall stones, or chronic appendicitis) than it is in normal individuals. This phase of the subject has been discussed more fully in a previous paper.

Bronchial allergy due to sensitiveness to milk or pollen may be brought out or made worse by acute bronchitis or rhinitis. Nasal sinusitis and polyps often play a contributory role in the etiology of asthma and nasal allergy. The importance of nasal defects in the etiology of asthma, while important has been greatly overestimated in some cases, and many patients have been made worse by radical work in the nose designed to relieve this condition.

While asthma is often, or usually, made worse by infections in the respiratory tract, one occasionally sees a chronic case apparently cured by an infectious disease. We have observed two chronic cases early in our experience, one of which was apparently permanently cured by an attack of erysipelas and one by a severe attack of typhoid fever.

Disfunction in the glands of internal secretion is rather frequently noticed in allergic individuals. We have observed goiters more commonly in hypersensitive patients than in others. We observed one case of severe chronic asthma of unknown origin which disappeared coincident with the development of a classical case of exophthalmic goiter. It is interesting to mention in this connection that the one remedy which almost never fails to relieve allergy, namely, adrenalin, is a product of one of the much discussed ductless glands.

SYMPTOMS

Symptoms of allergy are numerous; in fact, the more one studies the condition the more he is inclined to believe that reactions may involve almost any tissue or organ and cause disorder.

The more common symptoms are those which involve the mucous surfaces, which are exposed most frequently to the action of foreign substances which tend to sensitize, namely, the mucous membrane of the respiratory tract. Symptoms involving the skin, subcutaneous tissues and the internal organs are less common, and are usually part of a general reaction resulting from absorption of an offending allergin.

Symptoms involving superficial mucous surfaces, may occur as a result of the local effect of an allergin, or as part of a general reaction. For example, asthma may be the result of the inhalation of pollen or may be the result of a subcutaneous injection of pollen extract. Dermatitis on the hands and face may be a result of the local action of an allergin on the skin of the hands and face, or as we have observed once, as a direct result of pollen injections in the treatment of hay fever.

Symptoms occurring as a result of a general reaction are often multiple. For example, asthma occurring as the result of a general reaction from the eating of egg, is more frequently accompanied by other manifestations such as gastrointestinal disturbance, urticaria, etc., than is asthma caused by the inhalation of pollen (local reaction).

The symptoms to be mentioned subsequently, are those which are more commonly observed in patients having reactions. All may occur as a local or as part of a general reaction.

Ocular Symptoms: Oedema of the conjunctiva, puffiness, itching, swelling and redness of the lids. Excessive lachrymal secretions.

Nasal Symptoms: Sneezing. Pallor and swelling of the mucous membrane of the nose, associated usually with excessive watery or clear mucous secretion.

Pharyngeal Symptoms: Itching of the soft palate and pharynx; spasmodic cough; rarely, slight oedema of the uvula.

Bronchial Symptoms: Bronchial obstruction associated with inspiratory and expiratory wheezing (the latter more pronounced) and often associated with the expectoration of thick, mucoid sputum, rich in eosinophiles. In a less marked case, cough and shortness of breath on exertion may be the only marked bronchial symptom.

Cutaneous Symptoms: The more conspicuous are urticaria, angioneurotic oedema, eczema, erythema and pruritis, which may be either local or general. The dermatitis is often associated with marked swelling and redness of the skin, cracking of the skin (especially on the hands) profuse greasy secretion, and desquamation of the superficial epithelium. It may be most severe, and when the face is involved, may almost obliterate the features and transform it into a swollen, red, greasy, weeping, unsightly surface.

Gastro-Intestinal Symptoms: Abdominal pain, either steady or griping, local or general, mild or very severe, is the most interesting abdominal symptom. It is often related to the taking of food, and quite frequently appears a few moments after the ingestion of certain particular foods to which an individual is sensitive. Honey has been the most common single cause of acute abdominal pain of allergic origin in our experience. We have observed no less than six cases and believe it to be analogous in every sense to hay fever except that the stomach is involved instead of the nasal mucous membrane. The cutaneous reactions in honey cases are very striking. Other alimentary symptoms are abdominal discomfort, sour stomach, nausea, vomiting, bloating, diarrhoea, and mucous stools. Gastrointestinal upset occurring as a result of allergy may easily be mistaken for "ptomaine poisoning" or a surgical lesion. The local signs of peritonitis, fever, and leucocytosis, are not present. It occasionally, however, terminates in an acute inflammatory process in the gastrointestinal tract, or its appendages. We have observed four cases of acute appendicitis, which required surgery, to follow a severe attack of alimentary allergy.

Neurological Symptoms: Asthenia and a sensation described by the patient as nervousness, is rather frequently observed in patients who have hay fever, asthma, and other symptoms of allergy. Weakness may be so marked as to confine a patient to the house or even to bed. In fact, I have never observed a patient more profoundly asthenic than the sensitive patient mentioned previously who had been given a dose of horse serum. Patients with hay fever occasionally complain as much of weakness as of their respiratory distress.

Headache: May occur as a primary symptom of reaction or may be a sinus headache caused by obstruction of the outlet of some of the sinuses, due to the swollen nasal membranes. Headache may be most severe and often yields quickly to adrenalin in proper dosage.

Arthritis: Joint pain and swelling is a very definite and interesting manifestation of allergy. My friend, Dr. R. C. Lowdermilk, related to me the case of a patient who, following a therapeutic injection of pollen, developed a typical rheumatic joint, for the first time in her life; it lasted several hours during her reaction, and then disappeared completely. The development of joint pain and swelling, as part of a general reaction to therapeutic sera, is not very uncommon. There is some similarity between the joint symptoms of acute migratory polyarthritis and that of a reaction of allergy. For example, pain and swelling about a joint may migrate from joint to joint within a period of a few hours, or, in fact, at times, almost within a period of minutes. It is impossible that symptoms due directly and entirely to local infection, could appear or disappear at such a rate. While there is no doubt that acute migratory polyarthritis is an acute infectious disease, it is not impossible that some of the local symptoms such as pain and swelling may be in part the result of an allergic reaction about the joint. In fact, we have greatly relieved several cases of acute migratory polyarthritis by the use of adrenalin and believe it is frequently a useful aid in the treatment of this disease. We have used adrenalin in chronic hypertrophic, atrophic, and gonococcal arthritis with less or no beneficial effect.

Blood Pressure: Blood pressure is usually reduced (90 to 110 mm. of mercury).

Bladder Symptoms: Frequent painful micturition may occur as part of a general reaction. This is discussed in another communication. This type of reaction may be very severe and occurs especially in patients sensitive to vegetables or grains.

Obscure Symptoms: The obscurity of certain manifestations of allergy may be well illustrated by the following case:

A woman of thirty-five came into my office complaining of weakness, loss of energy, recent gain in weight (15 pounds) which symptoms apparently dated back six months or more. Upon examination was noticed mental apathy, pallid waxy appearance of the skin, puffiness of the face suggesting myxoedema and reduced blood pressure (95 mm. of mercury). We treated the patient for some months with little relief until she chanced to have an attack of bladder disorder with no evidence of infection in the urine or other adequate cause for these symptoms. A history of asthma in her father was then elicited and she was immediately tested and found very sensitive to several vegetables which she had been eating frequently. Her rapid recovery upon the discontinuance of these vegetables and with the use of a few doses of adrenalin, was most interesting. Within a few days she regained her strength, energy, usual vivacity, and good color and rapidly lost her excessive weight.

SECONDARY SYMPTOMS

Localized allergy may give rise to secondary symptoms which are often quite interesting. For example, a patient observed by the writer, complained of a seasonal headache, which was so severe as practically to incapacitate him for work. It would come on invariably each August and would disappear soon after frost. He was free from headache during one entire year which he spent in Florida. Upon examination, nothing of interest was found except a slight pale swelling of the mucous membrane of the nose with a very small amount of watery secretion. Adrenalin was used locally in the nose with almost immediate relief. Adrenalin used subcutaneously likewise gave relief. Intracutaneous tests with several fall pollens gave typical wheals with pseudopods, also a marked attack of nasal allergy as part of a general reaction. This patient was relieved completely when he was treated as a pollen case. The swollen membranes in the nose probably obstructed the outlet of some of the sinuses and gave rise in this way to headache.

Other secondary symptoms of interest are those caused by the swelling of the mucous membranes in the respiratory tract which in severe cases almost borders on suffocation. Oedema of the mucous membrane of the alimentary tract may give rise to symptoms simulating those of intestinal obstruction. This occurred in a patient sensitive to turpentine after the painting of her house.

It is also not difficult to understand how swelling and blanching in the mucous membrane of so delicate a structure as the appendix, could easily lead to obstruction of its lumen, irritation, and finally to an actual inflammatory process. This appeared to be the exciting cause of acute appendicitis in four of our patients. Chronic allergy may cause eventually debility and emaciation of such a grade as to overshadow symptoms of the primary disorder, and lead to an error in diagnosis.

DIAGNOSIS

It hardly comes within the scope of this paper to discuss in detail the diagnosis of allergy. For this the reader is referred to the many excellent articles already written on the subject.

Allergy may be suspected in any patient suffering from one or more of the symptoms previously mentioned, especially if there is a history of hay fever, asthma, chronic urticaria, or eczema in one or both parents, and especially if the onset, or relief of symptoms bears some relationship to season, geographical situation, environments, such as a house, workshop, stable, city, or farm, to time of day, habits, the eating of certain foods, to wearing apparel, odors, animals or pets, etc. Very often, important points can be gained through a careful history which makes it relatively easy to trace out the source of the condition.

The dermal, intradermal, and ophthalmic tests are always useful and are often indispensible in the diagnosis. Results obtained in this way, however, should be controlled and verified when possible by clinical tests—that is, tests made by the inhalation, ingestion, or avoidance of the suspected substances, before final conclusions are drawn.

Two methods for making skin tests are used at the present time—the cutaneous test advocated by Schloss and Walker, and the intracutaneous test advocated by Cooke. Each in our experience has its sphere of usefulness. By Walker's method, the substances to be used in the tests are applied to a scarified area on the skin in dry powdered form, and to this is added a drop of tenth normal sodium hydroxide solution. A positive reaction is indicated by the appearance of a wheal. This method is practical in testing patients who are extremely sensitive, as one finds in pollen cases, animal hair cases, and in some of the food cases and in children. Cutaneous tests, however, sometimes fail utterly (especially in the food cases and in children) where intracutaneous tests give satisfactory and convincing reactions. This is especially true in the older patients. In aged patients all tests are prone to fail.

Intracutaneous tests often give false positive reactions. Some of these can be discounted by comparing them with controls, with the history of the case, with ophthalmic tests, and with clinical tests. The obtaining of false positives, therefore, is not likely to lead to serious error. After all, skin tests have to be taken for what they are worth, for many patients are actually sensitive to and give positive skin tests to a number of substances, but are actually made ill by relatively few of them.

For example, one patient whom we studied, gave large characteristic wheals to every one of 18 spring and fall pollens used in making skin tests, to several specimens of animal hair, and to a large number of foods. He had no symptom of allergy, however, except hay fever and this appeared only in the fall months and disappeared with frost, and could easily be relieved by change in geographical situation. He was not made ill by contact with any of the animal hairs, spring pollens, or any of the foods to which he gave positive tests. The ophthalmic reaction is often useful in choosing from the several pollens which may give positive skin tests the one or two which are actually responsible for the symptoms of hay fever. Patients treated with pollen with clinical relief, continue to give positive skin tests to the pollen with which they were treated although stronger solutions are usually required.

In a certain number of patients who have a specific hypersensitiveness, it is almost impossible to elicit satisfactory skin tests even though one feels certain that the source of illness can be traced to a definite source. This finding seems more common in patients of mature or advanced age.

Coca has recently described the preparation of a solution which promises to facilitate the use of intradermal tests. He finds that his solution consisting of a mixture of phenol and sodium bicarbonate preserves allergens for eight months or more at ice box temperature. Toluol is added to the solution as a mild antiseptic. This simplifies intracutaneous testing a great deal, for ordinary solutions of allergen often possess an unhappy faculty of deteriorating rapidly. Coca's solution should make possible, therefore, a broader use of stock solutions and make less necessary the laborious procedure of using freshly or recently prepared solutions.

The technique of intracutaneous testing can be shortened, and simplified through the use of preliminary group tests—that is, through the use of mixtures of from five to eight somewhat similar substances. This often enables one to say that a person is sensitive to a certain mixture. Further tests can be made subsequently with each constituent of the mixture and in this way a great deal of time and trouble both for the patient and physician can be saved. No hard and fast conclusions can be drawn from preliminary testing, however. It is simply a useful means of obtaining a clue. The group reactions frequently come out more strongly positive than tests with any individual member of the group and vice versa, so that one should not let a negative result eliminate any individual constituent which he may suspect.

Cooke has very properly warned against the use of a large number of tests at one time. We have employed the group method described above, however, for over two years, using often more than 200 foreign substances at one sitting. We have, as yet, had very few severe reactions and none which did not yield immediately to adrenalin. We have been careful, however, I must admit, in the testing of pollen and animal hair cases, especially during the pollen season, and have frequently carried out preliminary scratch tests in patients whom we thought were unusually sensitive or sensitive to a large number of different allergens.

The writer described briefly in a previous paper a convenient method for using powdered food proteins for intracutaneous tests. This method might be useful for physicians who are not called upon often for these tests and who might find it laborious and expensive to keep on hand a large number of potent stock solutions. The great advantage of any powder method is that proteins and pollen in dry powdered form keep potent indefinitely (more than six years) at room temperature. Care must be used, however, in testing pollen and animal hair cases by this method.

TREATMENT

It is hardly possible in this paper to discuss the treatment of hypersensitiveness in detail. This problem may be approached in four ways—first, removal of cause; second, specific protein treatment; third, nonspecific protein treatment; and fourth, symptomatic treatment.

When a patient is sensitive to some substance which he does not encounter frequently, removal of the cause may be simple. In the case of pollens, however, which fill the air at certain seasons, removal of the cause can only be accomplished through change in geographical situation. In this case and in the case of sensitiveness to common articles of food such as milk, eggs, or wheat, which are used so much in cooking, specific protein treatment may be advisable.

In specific protein treatment the offending allergen is given subcutaneously in infinitesimal doses to start with. The dose is increased as rapidly as the patient's tolerance will permit and is continued until the patient gains enough tolerance to stand the amount with which his habits and environment bring him in contact. In a large majority of cases tolerance can be increased to a point of partial or complete relief when contact with the allergen to which an individual is sensitive is not overwhelmingly great.

If one is unsuccessful in finding the allergen responsible for an illness, symptoms can often be relieved temporarily by the use of non-specific protein therapy. This is not recommended if one can find the allergen to which the patient is sensitive.

As a temporary expedient, the use of adrenalin can be recommended and if given in sufficient doses should relieve almost every case. Tolerance for adrenalin varies so greatly in different patients that it is impossible to surmise the suitable dose for any individual. For this reason it is advisable to start with 0.5 cc. or less subcutaneously or intramuscularly given slowly. Doses of 0.25 to 0.5 cc. can be repeated at five or ten minute intervals until the patient is either relieved or until the symptoms produced by adrenalin are more disagreeable than those of his allergy. The adrenalin can be repeated every three to twenty-four hours, depending upon the time of recurrence of symptoms. It can be continued until a more practical and more permanent method of treatment can be instituted.

SUMMARY AND CONCLUSIONS

A certain rather large percentage of individuals inherit a constitution which makes it possible for them to become hypersensitive to foreign matter. Once sensitive, an individual may have severe symptoms of reaction whenever he comes into intimate contact with the substances to which he is sensitive. Patients are frequently specifically hypersensitive to certain varieties of pollen, less frequently to substances which can be extracted from the stems, flowers, roots, leaves or woody matter of plants, also to products obtained in the distillation of coal, wood and crude oil, also to emanations from animal hair or feathers, to drugs, dust, smoke, foods, bacteria, insects, etc.

As contributory causes which make the symptoms more severe are non-specific irritants of any sort, functional activity, reflexes, infectious, functional or organic diseases. The immediate effect of a contributory cause often deceives the patient and leads him to blame it for his illness rather than the primary cause, specific hypersensitiveness.

The more common symptoms are the ocular, nasal, pharyngeal, bronchial, cutaneous, and reduced blood pressure, less often gastrointestinal symptoms, neurological symptoms, joint symptoms, bladder symptoms, and other obscure symptoms.

The diagnosis can be made in a majority of cases through information gained by history, physical examination, cutaneous tests, ophthalmic tests, and clinical tests.

The condition can be relieved in a large percentage of patients by avoidance of the substances to which they may be sensitive. When this is impossible or impractical specific protein treatment is justifiable. Adrenalin is useful for temporary relief.

BOTANICAL NAME	COMMON NAME	APPROXIMATE DATE OF BLOOMING
Negundo Aceroides	Box Elder	April
Cary	Hickory	May
Jugians	Walnut	May
Populus Deltoides	Cottonwood	April
Fraximus Varidis	Ash	April
Platanus Occidentalis	Sycamore	May
Querous	Oak	April-May
Ostrya	Ironwood	April-May
Pianpago	Buckhorn	May-September
Pua Prastonse	Blue Grass	May
Secale Cersale	Rye	May
Dactylis Glomerata	Orchard Grass	May-June
Humer Acetosela	Red Sorrel (Dock)	May-Frost
Coreopsis		June
Trypsioun Dectyloides	Slough Grass	June
Paleum Praeotenso	Timothy	June
Typa Latifolia	Oattai	June
Triticum Sativa	Wheat	June
Cchrysanthenum	Oxeys Daisy	June
Yarrow		June
Babidita	Coni Flower	July
Helianthus Annus	Sunflower	July-August
Chenopodium	Lamesquarter	July-October
Zeamays	Corn	July-August
Cannabia Sativa	Hemp	July-Frost
Amaranthus Hybridus	Pigweed	July-Frost
Amaranthus Retroflexus	Careless Weed	July-Frost
Solidago	Goldenrod	August-Frost
Kanthium Canadonse	Cockle Burr	August
Ambrosia Trifica	Horseweed	August-Frost
Ambrosia Artemisafolia	Ragweed	August-Frost
Ambrosia Bidentata	Southern Ragweed	August-Frost
Bidens Involuctata	Spanish Needle Pstodo	September-Frost
Iva Ciliata	Marsh Elder	September-Frost
Artemisa	Sage	September-Frost

SYPHILIS AND SYPHILIS-LIKE AFFECTIONS OF THE MOUTH.*

Alfred Schalek, M. D., Omaha, Nebr.

This subject has been selected for discussion for several important reasons. Diseased conditions of the mucous membranes of the mouth are seen frequently by accident by dentists, internists, laryngologists and others. They may be entirely limited to these parts or they may be a part of an eruption of the outer skin. They may be the beginning or the complication of acute systemic infections and they may be a symptom of syphilis. Immediate attention, if the trouble is recognized in time, will often prevent serious consequences. Descriptions of diseases of the mouth may be found scattered under various heads in text books, but a general review, giving their connection with other conditions and their differential features, is scarce.

Syphilis preferably attacks tissues which are exposed to more or less traumatism and the mouth is probably subject to more constant irritation than any other part of the body, such as pyorrhoea, bad teeth, alcohol, tobacco and from food, highly seasoned, and of extremely high or low temperature. The tonsils with their crypts favor the invasion of microorganisms. Excoriations, often very small and almost invisible, occur constantly on the lips and on the tongue. It is not surprising, therefore, to see lesions of syphilis in the mouth so frequently.

Syphilis affects the mucous membranes of the mouth in its early and late stages and in the congenital form. A knowledge of syphilitic affections of the mouth are of importance for several reasons: To the physician, to take the necessary precautions for himself; to the patient to put himself under the right care, in time to avoid serious consequences, and to the community which is threatened with infection with syphilis more often from lesions in the mouth than from any other source.

The diagnosis of syphilis of the mouth must be made both from clinical and pathological observations. The spirochaete may at times be demonstrated in the dark field. The Wassermann test, if positive, is a valuable help. The history of the patient as to infection and previous manifestations is a valuable contributory evidence. The clinical appearance, however, of the lesions themselves has for many years been the only guidance and must still be mainly relied upon at the present time for the diagnosis. Syphilis imitates every other pathological condition, but almost always has some characteristic features which give it a place of its own.

The earliest evidence of a syphilitic infection is represented by the initial lesion or chancre. On the lips it may resemble an epithelioma and this differential diagnosis may come up for consideration. The following points should clear the doubt in most cases: The chancre usually appears in the center of the upper lip. The lesion is not sharply circumscribed, there is scanty secretion and pain is absent. It develops within weeks and regional adenopathy appears early. Cancer is a disease of middle age, usually seen laterally on the lower lip. It occurs frequently in smokers, due to the pressure of a pipe. It is surrounded by a raised, hard wall, is covered with thick pus and bleeds easily. Pain is often present. The glands may not enlarge for some time.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

The early stage of syphilis of the mouth is seen as a diffuse inflammation of the fauces and as mucous patches. The characteristic features of the syphilitic angina are the sharply defined hyperaemic margins surrounding the fauces. Inflammation of the throat from other causes may be present, and in this connection it must be remembered that all manifestations in syphilitics are not necessarily due to the specific cause, but may be coincidental complications. The mucous patches may be mistaken for aphthae or vice versa. The latter are inflammatory conditions, quite painful and usually the consequence of gastro-intestinal disorders. They appear and disappear in a short time.

Affections of the mouth of different etiology often resemble specific conditions and the characteristic points should be known and kept in mind. Mercurial stomatitis, severe at times and leading to ulcerations, may be difficult to differentiate. especially because mostly occurring in syphilitic individuals who are taking treatment. The ulcerations due to mercury are usually grouped regularly along the edge of the mucous membrane of the gums and the roots of the teeth. They are rather superficial and usually accompanied by salivation. The complications of the mucous membranes in the mouth in connection with acute infectious diseases, such as scarlet fever, measles and others, rarely will permit a mistake. On the other hand, diseases of the oral cavity, which appear as part of other eruptions of the skin, especially at times when they are the only manifestation, may cause difficulty in their recognition. Eczema and psoriasis rarely occur in these locations. Lichen planus appears there quite frequently forming patches of various sizes of whitish color, slightly depressed in the center, without infiltration and with little inflammation. Ulcerations of the fauces and of the tonsils may be due to follicular infections, Vincent's angina, or diphtheria. In diphtheria we find the characteristic firmly adherent grayish membrane surrounded by an inflammatory areola. General symptoms accompany the local condition. The bacteriological examination usually confirms the diagnosis. Leucoplakia is a condition found rather frequently on the mucous surfaces of the mouth. Unquestionably it is often due to syphilis, though not necessarily an active manifestation. The possibility of its transition into epitheliomatous degeneration should always be kept in mind and looked for. The mucous membrane is thickened, feels dry and hard and has a dull grayish color. Infiltration of the tissues underneath and breaking down of the superficial layers mark a cancerous change.

In late syphilis the mouth is the seat of gummata and ulcerations producing changes and destruction of tissues, which at times closely resemble those of tuberculosis and carcinoma. When the ulcerations are caused by a tuberculous process, they are formed by a confluence of miliary tubercules which have broken down. The patients, as a rule, exhibit evidences of other internal and external lesions of the same etiology. Tubercle bacilli are rarely found, but inoculation of a guinea pig with the diseased tissues may produce tuberculosis.

In congenital syphilis the most characteristic changes are those of the teeth, which persist after all other evidences of the disease have disappeared. The upper incisors show a moon-shape convexity of the cutting edges are irregularly arranged and at times of different size. They may form one phase of the Hutchinson trio of which keratitis and congenital deafness are the other two.

The object of this paper is to impress the necessity of a thorough inspection of the mouth as a routine part of every examination. At times this will result in drawing the attention to overlooked conditions: at others it will confirm a diagnosis and call for timely therapeutic measures.

DIPHTHERIA

In the Great Lakes region, the mortality from diphtheria has been reduced from 100 for every 100,000 of the population in 1894 to 15 in 1920. But measures are still needed to cut down the number of cases of the disease, especially in the rural districts. The measures are at hand and their efficacy has been amply demonstrated. They include the Schick test, a simple harmless test, that determines whether the person is liable to contract diphtheria. Children found to be susceptible can then be protected by the injection of toxin-antitoxin.—Hygeia.

MANAGEMENT OF ACUTE SINUS INFECTIONS.*

J. C. Tucker, M. D., Beatrice, Nebr.

It is neither my purpose nor intention to tire you with a long technical dissertation on sinus conditions. I will confine my remarks to a few practical points.

Briefly reviewing the anatomy of the nasal accessory sinuses, they are the hollow parts of the bones of the face. Functionally and physiologically they are parts of the respiratory system. The largest of the sinuses is the maxillary or antrum of Highmore. The next largest the frontals. The maxillary sinuses are the most frequently infected of the group for several reasons.

First: They are the largest.
Second: They are the most dependent.
Third: They are in close proximity to the teeth and maxillary process and most subject to extension from these frequently infected structures.

The nasal sinuses are lined with mucous membrane which consists of a basement membrane and a single layer of cuboidal, ciliated epithelium. Normally there are no mucous glands except about the orifices of the sinuses. The normal opening into the nose of the anterior, ethmoidal cells and the frontal sinuses is through the infundibulum. The infundibulum is on the upper, outer, anterior part of the nose and covered over by the anterior end of the middle turbinate. The maxillary also opens into the nose beneath the middle turbinate.

The functions of the nasal sinuses are:

1. To warm and moisten the inspired air.
2. To give resonance to the voice.
3. To lighten the head and give strength and symmetry to the face.

The maxillary sinuses and part of the ethmoids are present at birth. The frontals develop from the 1st to the 6th year on an average.

Infection of the sinuses comes about by:

(1) Extension of infection from an acute coryza or rhinitis or other acute infection in the nose, the organisms gaining entrance through the natural orifices.
(2) Infection which is blood or lymph borne.
(3) Infection by continuity.

Under this head the most common sources of infection are extension from an infected tooth or extension from infected tonsils and adenoids. Needless to add, as is true of any other infection, it is more apt to occur during some concurrent infection when the general vitality is at a low ebb.

Acute sinusitis is more prevalent during the winter and spring. It is also much more frequent during epidemics of influenza or of the other respiratory diseases, for instance. I have never examined a measles patient without finding some sinus complaint or involvement. And while measles is an acute exanthematous disease the respiratory mucous membrane is probably as extensively involved as the skin.

Now is a good time to mention the point that when treating acute sinus infections one is dealing chiefly with a mucous membrane pathology. Pathologically it is a hyperemia and acute inflammation which may or may not terminate in a purulent inflammation depending on resistance of patient, virulence of infecting organism and treatment instituted. In some types of sinus disease there is bone involvement, but acute sinus infection is chiefly a matter of mucous membrane pathology. In the case of maxillary sinus infections secondary to diseased teeth, there is mucous membrane involvement secondary to bone involvement but in the sum total of sinus disease this is not a very large percentage.

Age of incidence. No age is exempt. Sinus infections occur from infancy to old age. It is more prevalent in young adult life, probably due to the fact that young adults are more exposed to the respiratory diseases. As to sex it seems to be about equal according to my observation.

Probably epidemics chiefly involving the respiratory tract as influenza, furnish the largest part of our acute sinus infections. Every coryza from whatever cause is a potential sinus case.

Symptoms of sinusitis are ushered in as an acute cold, first a feeling of stuffiness or fullness in the head, general lassitude and bodily weakness. Patient may feel chilly or have a decided chill. Attacks of sneezing occur. Pain is of varing degrees of intensity. The pain usually localizes later in the region of the sinus or sinuses chiefly involved. The pain of a frontal involvement is usually felt over the sinus involved. Pain from ethmoid involvement in and back of the eyes. Maxillary sinus pain over the sinus or in the temporal region or toward the ear on the side involved. Sphenoid pain back of and in the eyes and usually radiating toward occiput.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

With these brief and rather rambling remarks directed toward anatomy, pathology and symptomatology let us pass to the part in which the patient is chiefly interested; that of giving relief or treatment.

If possible the patient should go to bed and stay there until well, as I firmly believe that that alone will do a great deal for most of these cases.

Give a purge, and I prefer a saline or calomel in broken doses followed by a saline. Small doses of camphor and belladonna as found in the ordinary rhinitis tablets in the very early stages will give the patient much comfort by lessening and shortening the time of the watery nasal discharge.

Heat or cold applied locally will usually very greatly relieve the pain. In children I always use heat. Personally I do not think there is any decided advantage of one over the other. When ice is on hand it can be tried in adults. Heat has the advantage that hot water and a large towel and a hot water bottle can be found in almost every home. I am somewhat in favor of the hot moist compresses over the pain region, applied at first continuously until relief is obtained. Or a good way is to leave directions for hot moist compresses for 30 minutes every 4 hours. Whenever the patient expresses a preference for either heat or cold I see no reason why his inclination should not be gratified.

Salicylates may be given internally up to full dosage. Even up to the custom of Dr. Gifford where one grain per pound of bodily weight is given in 24 hours. If the salicylates are not well tolerated by mouth they may be given per rectum.

If the pain is not controlled by the above, opiates can be used. Most of the older practitioners are quite partial to Dover's Powder early in any respiratory involvement, and I am inclined to believe it is good therapy. One gets not only the prompt relief from pain but profuse perspiration which promotes elimination.

Aconite is another favorite of the older men but with this I am not well acquainted.

Posture in bed has quite a little to do with the comfort of the patients. I think the only rational explanation of influence of posture aside from the rest is that it may facilitate drainage from the sinuses. For example, the anterior ethmoid and frontal sinus drainage is better in the upright position; drainage from the antra when on the sides, and the sphenoids have more dependent drainage when the face is down and the head slightly lower than the shoulders.

Locally in the nose one of the various non-irritating silver salts may be used for their mild antiseptic action. One of the best is neo-silvol which is very slightly irritating and does not stain the linen. It may be used up to 20% solution or even stronger. It is very easily administered by having about 5 drops placed in each nostril with a medicine dropper while the patient is prone on his back.

Following this a nasal spray may be used to shrink down the congested mucous membrane. Adrenalin in oil in strength of 1 to 4 or 5 thousand is very efficient. I use 1 part of adrenalin inhalant to 3 parts of olive oil. This is usually effective with very little discomfort to the patient. In some patients the adrenalin mixture will cause some sneezing and a tingling sensation in the nose. Adrenalin is quite effective in shrinking down congested nasal mucous membranes and thus relieves the stuffy sensation in the nose and promotes drainage by giving any material which may be in the sinuses a better chance to get out. When an atomizer is not at hand it may be administered with an ordinary medicine dropper.

One thing in which all these patients should be instructed is in the gentle art of blowing the nose. The nose should be blown gently and with both nostrils open, this is chiefly for the protection of the middle ears to avoid infection caused by forcing infectious material into the Eustachian tubes.

When the nasal discharge is copious and so profuse that it obstructs or annoys it may be removed by irrigating the nostrils one or more times a day. This can be done by an ordinary fountain syringe suspended a few inches above the head or with a small rubber bulb ear syringe. In either case the patient should bend well forward, mouth open and wash gently. This again is for the protection of the Eustachian tubes. Warm normal salt solution to which is added a little soda is, I think, as good as any. The purpose of the wash is to remove the discharge from the nasal passages. The wash should be followed by a little oil.

I have avoided mentioning any internasal procedures or those which are usually carried out by the rhinologist. Of course, the acute sinus which does not respond in a few days to the above treatment needs more painstaking methods of diagnosis and treatment.

I have purposely avoided any very technical methods or practices of diagnosis or treatment. No especially technical knowledge or equipment is necessary to carry out the treatment of a bed patient with acute sinusitis. Cases which require eliminating diagnostic procedures are not considered. The discussion of surgical sinus disease is not within the scope of this paper. I wish to stress the bed treatment of acute sinus cases which can be carried on by the practitioner in any case and under most home conditions. Well directed treatment during the acute stages will very greatly lessen the amount of chronic disease I feel sure.

REFERENCES

Skillern—Nasal Sinuses.
Gray's—Anatomy.
McKenzie—Disease of Nose and Throat.
Potter—Nebraska State Medical Journal, May 1923.
Gittings—Iowa State Medical Journal.

MISSED ABORTION.

C. H. Waters, M. D., F. A. C. S., Omaha, Nebr.

The term "missed abortion" very appropropriately describes a condition which is relatively of more frequent occurrence than the published reports indicate. Undoubtedly it accounts for some instances of amenorrhoea in which the existence of pregnancy is not demonstrable. In particular, however, missed abortion will explain many instances of pregnancy which not only show a failure in progress, but even a recessive tendency, especially as regards the size of the uterus.

In the etiology of missed abortion one must consider two fundamental facts or factors which differentiate this condition from the ordinary complete or incomplete abortion. Of these two factors the death of the embryo or fetus is primary, and is brought about by circumstances arising in the fetus independent of, and often unassociated in any way with disturbances in the embryonic or maternal elements of the placenta. In fact, the latter may even retain its viability and growth potentialities, thus differing radically from the process which obtains in the ordinary abortion. The cause of such exclusive embryonic death must be conjectural and might be found in some fundamental fault of development, torsion or other disturbances of the cord, or in faulty fetal or maternal metabolic processes. The second point of variance is the unusual and all but inconceivable, yet characterizing, tolerance of the uterus for the products of conception, both living and dead tissues. The logical explanation of this phenomenon is based on the assumption that fetal death has taken place while the placental elements retain their attachment and, hence, nutrition, more or less undisturbed; and may continue parasitic existence for occasionally unusual periods.

The great majority of missed abortions will terminate ultimately by spontaneous expulsion, provoked, it is thought, by the return of the stimulus that inaugurates menstruation. In some, however, there seems to be a possibility of eventual complete absorption—a plausible termination only in case of early fetal death. After the third month maceration usually follows the death of the fetus, although occasionally there is mummification or lithopedion formation. Infection and putrifaction, fortunately, are rarely seen. The period of retention, or rather of uterine tolerance, ranges from a week to years—in fact one extreme instance of 52 years duration has been reported.

A study of the placenta and its components in cases of missed abortion shows, in many instances, an increase in size beyond the normal for the age of the fetus at the time of death. This increase has been found to be due in part to a fibrinous infiltration undergoing organization, and in part to actual growth of the tissues. In cases in which intermittent bleeding has occurred areas of hemorrhagic infiltration, degenerative changes and necrosis will usually be found. The chorionic tissues not infrequently show definite tendency toward hydatidiform degeneration, and suggests the possible origin of some hydatidiform moles and chorioepitheliomata—thus introducing the danger element in neglected cases of missed abortion.

The symptoms, from the subjective standpoint, are those of early pregnancy, to which may be added a slight temperature, malaise and, in most instances, occasional bloody discharge. In some cases the patient herself notices the recession in the size of the abdomen.

The diagnosis, while aided by the above symptoms, should be based exclusively on the discrepancy between the duration of pregnancy and the actual attained growth. Repeated examinations at two week intervals, over a period of four to six weeks, will often be necessary to prove beyond question the failure in normal development. Obviously after the fourth month the absence of fetal movements and heart sounds would be of great assistance in assuring a diagnosis. Treatment, which should be instituted as soon as the condition has been recognized, consists of dilatation of the cervix and thorough removal of the uterine contents with placental forceps, followed by careful curettage.

As examples of the various forms and manifestations of missed abortion the following case histories may be of interest:

Case 1. Early fetal death—Hematometra.

Mrs. J. Age 26, complains of colicky pain in the lower left side of the abdomen, nausea and repeated vomiting and marked nervous irritability. Menstruation failed to occur at the expected period three weeks ago; and during this time she has had the above symptoms, which have been increasing in severity, accompanied with slight temperature and occasional mild rigors. Menstrual history, prior to the present disturbance, has been normal. On examination considerable tenderness and rigidity was found in the lower abdomen, especially on the left side. Both breasts were abnormally sensitive, but secretion was absent. Pelvic examination showed a small, very firm, conical cervix which was well to the left of its normal position. On the left side a globular and exceedingly tender mass was felt but could not be definitely outlined, nor its attachments demonstrated, because of the extreme abdominal sensitiveness. There was no discharge of any description, nor had there been at any time. Temperature 100.2°; pulse 90. Urinalysis negative. White blood count 17,600 with 76% polynuclears. A diagnosis of tubal pregnancy, probably unruptured, was made, based on the findings in the pelvis, a history of missed period low febrile reaction, and leukocyte response suggestive of hemorrhagic absorption. Pelvic examination under anaesthesia, however, showed the mass in the left side to be the fundus of the uterus, enlarged to the size of that of a three months pregnancy. It was readily replaceable in the mid line; was of boggy rather than elastic consistency while the cervix was small, conical and as firm as in the non-pregnant state, and the external os was of the pinhole type. The adnexae were negative. The confronting possibilities lay between retention of menstrual blood due to an unusually stenotic cervix or some disturbance in early pregnancy, either concealed hemorrhage or hydatidiform degeneration. At all events there seemed to be sufficient justification for intervention, and with the moral support of a conveniently appearing colleague, the cervix was dilated. Considerable difficulty was experienced in introducing even the smallest Hegar dilator through the internal os, but its withdrawal was followed by a trickle of watery, chocolate colored fluid. Adequate dilatation was obtained for the introduction of a fenestrated dressing forceps, considerable chocolate like fluid escaping, together with a few small clots of old blood. Exploration of the uterine cavity, with the dressing forceps and dull curette, yielded a surprisingly small amount of decidua and no grossly demonstrable embryonic tissue. Microscopic examination of the curettings, however, showed degenerating chorionic villi. Subsequent course uneventful—the uterus being found normal in size, position and consistency, some two weeks later.

Case 2. Embryonic death. Retention of ovum for ten weeks.

Mrs. M. Age 44. 11-para. Last menstrual period on or about September 28th, 1915. On November 1st, following, she fell from the step of a street car, striking heavily on the buttocks. For several days had considerable pain in the hypogastric region and a low backache; and during this time remained in bed. As she had passed her expected menses she was examined by myself and a distinguished gynecologist—the latter at the request of the street railway company. Neither of us found anything of moment, but noted slight tenderness in what appeared to be an also slightly enlarged uterus. Persistence of vague abdominal discomfort and backache, together with considerable nervous irritability, the continued absence of menstruation and negative pelvic findings on repeated examination, led me to assure her that her trouble was probably associated with the inauguration of the menopause, accentuated, perhaps, by her accident.

During the night of January 15th, 1916—three and one-half months after the last appearance of menstruation—she began to have rather severe cramps in the lower abdomen, accompanied by a moderate flow, and shortly passed a mass composed of blood clot and tissue. The latter was an intact oval sac measuring approximately four centimeters in its longest diameter, and the greater part of its surface covered with chorionic villi and decidua. The sac, when opened, was found to contain practically clear fluid; while on the side on which the chorionic villi were most massed was a flattened oval area, a centimeter in length, whitish in color and of a somewhat nodular surface. This area was assumed to represent the cord and perhaps the embryo, of which no trace was to be found in the sac. The scanty bloody discharge which followed entirely ceased in seven or eight days, and subsequent menses were regular and normal. Examination six weeks after the abortion showed the uterus noticeably smaller, while there was marked improvement in her local disturbances and the nervous condition.

This case emphasizes certain medico-legal possibilities for the action for personal damages was settled long before the actual extent of such damage was demonstrated. It so happened that this woman, sterile for ten years, had given up all hope of having another child, and felt, therefore, that settlement —at least from her standpoint—was premature.

The extruded ovum was of a size approximating that of a four weeks gestation; and I concluded, justifiably I think, that embryonic death occurred at the time of her accident. The non-occurrence of abortion within a reasonable time thereafter suggests that little or no disturbance of the attachment of the ovum resulted, and would explain the unusual toleration of the uterus for such foreign bodies.

Case 3. Complete embryonic absorption. Amenorrhoea for 28 weeks.

Mrs. W. Age 27. 1-para. Menstruated last on April 15th, 1917. On June 30th examination showed the usual findings of an approximate two months pregnancy. On August 16th she stated that there had been intermittent spotting of chocolate colored discharge of several days duration, which seemed to have been inaugurated by a cross-country auto trip. There had been no abdominal discomfort. The uterus was found to be the size of a four months pregnancy, the os slightly patulous. No discharge at that time. On September 22nd the uterus was found slightly smaller, in good position and fairly firm. There had been no further abnormal discharge. Turbid secretion readily expressed from both breasts. The thyroid was symmetrically enlarged. She complained that she didn't feel quite right, tired easily and was decidedly more irritable. On October 20th she stated that for the past three days there had been a scanty bloody discharge and that her nervous symptoms were more pronounced. The uterus was found in good position, smaller even than on the preceding examination. In fact it seemed to be about normal with the exception of a doughy consistency of the fundus. The cervix was patulous and a scanty muco-sanguinous discharge was present. The thyroid was measurably larger, particularly the right lobe and the isthmus. Blood examination showed only a moderate secondary anemia.

On November 5th, twenty-eight weeks since the last menstruation and eleven weeks since the onset of the spotting, an exploration of the uterine cavity and a curettage was done. The uterus was half again its normal size and the cavity empty. On the left side of the cavity, and near the cornua was an irregular area which was estimated to be the size of a half-dollar. From this area a considerable mass of inspissated, friable grayish-white material was removed, leaving a readily demonstrable excavation in the uterine wall. Following the curettage there was a gradually diminishing flow for ten days. One month later menstruation occurred and was unusually profuse and prolonged. The thyroid enlargement had largely disappeared. Five months later she again became pregnant and went to term uneventfully.

The microscopic examination made of many of the fragments obtained showed no trace of chorionic villi, or other evidence of purely embryonic structures; but did show well formed normal endometrium, incorporating or immediately proximate to well preserved masses of decidual cells. Other areas of decidual structure, undergoing degenerative changes, showed only shadows of these cells in an otherwise homogeneous, poorly sustaining matrix.

From a speculative standpoint it seems logical to assume that death of the embryo occurred about the fourth month—the time of the appearance of the first spotting. Retention and slow absorption of the essential embryonic tissues ensued, leaving ultimately a localized area—presumably the placental site—which showed persistence of decidual formation which was gradually being replaced by normal endometrium. Such a persistence of decidua emphasizes the warning of Vineberg as to the possibility of malignant changes occurring in such tissues. A further point of speculative interest is the question of whether maternal tissues, specifically the decidua, may supply the inhibitory mechanism as regards menstruation during pregnancy, as the above reported case would suggest, or whether such agency exists solely in the essentially embryonic structures.

In conclusion I wish to emphasize the following points in regard to missed abortion, namely: It is not of infrequent occurrence; it accounts for some instances of prolonged amenorrhoea, accompanied by ill health otherwise unexplained; it is a very probable explanation for evidences of recession or status quo in pregnancy; and, finally, there is a very significant tendency toward malignant change—and hence the necessity of early recognition and appropriate treatment.

BIBLIOGRAPHY

Rhodes. Am. Jour. Obs. 1910. L. XII. 683.

Rosenstein. Monatsch. f. Geb. u. Gyn. 1911. XXXIII. 764.

Rongy and Arluck. Surg. Gyn. & Obs. 1921. XXXII. 171.

Litzenberg. Am. Jour. Obs. & Gyn. 1920-1921. o 474 and 522.

Greenhill. Trans. Am. Assoc. Obs. & Gyn. 1921-22. II. 188.

TREATMENT OF SCIATICA BY INJECTION

In 1200 cases, Docent Bum (Vienna), obtained the best results with a solution of 0.7% sodium chloride and 0.07 to 0.1% calcium chloride of which 120 to 150 ccm. was tangentially injected into the nerve sheath of the sciatic nerve under high pressure. The sheath is hereby distended in the form of a spindle and mobilized; thus any existing adhesions are stretched or torn. The purely mechanical or hydrodynamical effect is far superior to that obtained by means of medicaments. Alcohol injections have, in particular, caused severe injury to the nerves accompanied by permanent paralysis; and the antipyrine injections recommended by Hogler (see "Ars Medici", 1922, p. 199) do not appear to be entirely harmless. (Wiener klin. Wochenschrift No. 41, 1922.)

GRADUATE MEDICAL EDUCATION IN THE UNITED STATES

Special attention is called to the statement regarding graduate medical education included in the annual report of the Council on Medical Education and Hospitals to the House of Delegates. The undergraduate curriculum can be best developed only when the fields of both premedical and graduate medical education are well worked out. The higher premedical requirements relieved the medical curriculum of the essential courses in physics, chemistry and biology, and provided the student with a better foundation for the more complex medical subjects. A well developed curriculum for graduate medical schools will provide a place for technical subjects now crowded in the undergraduate curriculum. Clinical teachers frequently consume much valuable time in the undergraduate school in discussing subjects which belong in the graduate school. This time would be spent far better in emphasizing the essential principles of the various clinical specialties, in which all general practitioners should have a thorough grounding. With the development of the graduate school, the medical curriculum could be so graded that all subjects would be taught in their logical sequence to the benefit of both undergraduate and graduate students. The former would obtain a better knowledge of general medicine which, in the graduate school, would enable him better to master the advanced courses. The principles governing graduate medical schools contained in the Council's report are of particular importance at this time, since the need of increased opportunities in graduate medical instruction has become so well recognized. Not only should these opportunities be enlarged, but also the character of the training provided should be greatly improved and certain evils which heretofore have developed in graduate teaching should be eliminated, particularly that of granting pretentious and ornate diplomas after ridiculously short or inadequate courses of instruction. The training in each of the various clinical specialties, particularly, should be materially strengthened, whether it be provided in a continuous course of two or more years, or whether provision be made for it in a series of short, graded courses. All short courses should be adequately safeguarded so that they may not become easy short-cuts into special fields for which a longer training is essential. The further development of graduate medical education will have several beneficial results: It will bring into practical use an abundance of clinical material in this country not now being utilized, and convert many large hospitals into active educational centers; there will be a stimulus for better work in the institutions where such medical instruction is given; it will enable more physicians to secure an improved knowledge and skill either for general practice or a chosen specialty, and finally, this improved medical service will benefit not only the patients in the hospitals but also the public at large.—Jour. A. M. A., July 14, 1923.

A STUDY OF SALICYLATES IN RHEUMATISM

The use of salicylic acid or its derivatives in clinical medicine is not a novelty. These continue to be employed with satisfactory results in a variety of disorders, among which acute rheumatic fever is outstanding in respect to the improvement or relief of patients affected by it. One cannot ascribe such widely recognized results to the passing enthusiasm for some novelty in drug therapy. Substantiated by years of empiric observation, they must have some more worthy explanation. Obviously, the search for the latter is rendered much more difficult so long as the etiology of the disorder is not clearly established. If we adopt the current hypothesis that rheumatic fever is an infection—a sort of "attenuated pyemia"—it seems logical to think first of all of the possible antiseptic action of salicylic acid in the body fluids, particularly in the inflamed joints where the infection may be localized. In previous issues of The Journal it has been pointed out, however, that the conditions existing in the living body preclude the possibility, or at any rate render it extremely improbable, that salicylic acid can accumulate in bactericidal quantities in the tissues during life. The antipyretic potency of the salicylates does not account for their beneficial effect in rheumatic arthritis, since other potent antipyretics are not equally efficient; and a similar argument of comparison applies to the doctrine of the analgesic virtues of salicylic acid derivatives. Morphin, for example, does not relieve the redness, heat and swelling of inflamed joints. In an attempt to imitate rheumatic arthritis experimentally in animals, Swift and Boots* of the Hospital of the Rockefeller Institute have noted that rabbits inoculated intravenously with nonhemolytic streptococci, while under the influence of full therapeutic does of sodium salicylate, developed almost as many inflamed joints as the untreated controls similarly inoculated. The salicylated rabbits, on the other hand, had a much higher proportion of mildly inflamed joints than did the controls. This anti-inflammatory action was most evident in the animals inoculated with streptococci of the lowest virulence, and could not be demonstrated in animals inoculated with hemolytic streptococci. Thus we stand before the experimentally demonstrated fact that salicylates may modify favorably certain types of inflammation of the joints, while the explanation of this fortunately beneficent result still remains to be ascertained.—Jour. A. M. A., June 30, 1923.

---

*Swift, H. F., and Boots, R. H.: Influence of Sodium Salicylate on the Arthritis of Rabbits Inoculated with Nonhemolytic Streptococci, J. Exper. Med. 33: 533 (April) 1923.

THE PROMPT EFFECTS OF SALVARSAN THERAPY IN CASES OF GANGRENE OF THE LUNGS AND FOETID BRONCHIECTASIS

The statements made on this subject by Plauty and Becker have been confirmed by Prof. H. Curschmann (Rostock). The success resulting from this treatment also applies to cases showing no fusospirilla bacteria in the expectoration. It is important that the injections of neosalvarsan (in small doses, 0.15 to 0.3 intravenously, about twice a week) should be commenced early. A rapid improvement then takes place in temperature and expectoration. The advisability of the dangerous lung-operation (30 to 40% mortality) is only taken into consideration when salvarsan treatment of several weeks duration has proved unsuccessful. Salvarsan is, as a matter of fact, indicated in all cases of spontaneous bronchogenic and especially metapneumonic gangrene of the lungs. (M. Kl. No. 38, 1922.)

PAIN IN ANGINA PECTORIS. — QUININE TREATMENT

According to Pezzi, quinine is a specific sedative for the vegetative nervous system, an antidote to adrenalin. Pain, reflex phenomena and accompanying tachycardia are relieved by administering 0.6 to 1.0 of quinine daily, in divided doses, for one week, followed by a pause of a week. (Med. Paris, No. 6, 1922.)

"The average nurse on graduation from one of our large hospitals feels that she knows far more than the average interne, and often has no hesitancy in criticizing from her larger knowledge, the practitioners of many years' standing."

BOOK REVIEWS

New and Nonofficial Remedies, 1923, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1923. Cloth. Price, postpaid, $1.50. Pp. 415+XXXVI. Chicago: American Medical Association, 1923.

The progressive, up-to-date physician cannot dispense with the newer remedies, proprietary and nonproprietary. Yet he can neither select them on the basis of the manufacturers' claims alone, nor devote his patients to experimets while he tries out those claims.

New and Nonofficial Remedies is the publication of the Council on Pharmacy and Chemistry through which this body annually presents the American medical profession with disinterested, critical information about the proprietary medicines which are offered to the profession, and which the Council deems worthy of recognition. In addition to the descriptions of proprietary preparations, the book contains descriptions of those nonofficial remedies which the Council deems deserving of consideration by the profession.

A valuable feature of the book is the grouping of preparations in classes. Each of these is introduced by a general discussion of the group. Thus the silver preparations, the iodine preparations, the arsenic preparations, the animal organ preparations, the biological products, etc., each is preceded by a general, thoroughly up-to-date discussion of the particular group. These general articles compare the value of the products included in the group with similar pharmacopeial and other established drugs which it is proposed that these proprietary preparations shall supplant.

A glance at the preface of this volume shows that the book has been extensively revised. In fact each edition of New and Nonofficial Remedies is essentially a newly written book, brought up to date by those who speak with authority on the various phases of therapeutics.

Physicians who wish to know why a given proprietary is not described in New and Nonofficial Remedies will find the References to Proprietary and Unofficial Articles not found in N. N. R. of much value. In this chapter (in the back of the book) are given references to published articles dealing with preparations which have not been accepted.

New and Nonofficial Remedies should be in the hands of all physicians who prescribe drugs. The book contains information about the newer materia medica which cannot be found in any other publication.

The book will be sent postpaid by the American Medical Association, 535 North Dearborn Street, Chicago, on receipt of one dollar and fifty cents.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor,........Madison, Neb.
R. B. Adams, M. D.,
Associate Editor,........Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.
F. A. Long, Chairman........Madison
W. O. Bridges........Omaha
B. F. Bailey........Lincoln
R. B. Adams, Ex officio........Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII August, 1923 No. 8

A LESSON IN HOSPITALIZATION

A physician whose professional career had extended over two score years without any illness, became a patient, a doctor-patient as it were, and suddenly the doctor portion of him became submerged and as patient he found himself occupying a room in a modern hospital of 150 beds in a faraway city. Professional dignity was gone but there was enough mental alertness left to take observation on the processes of an apparently well conducted hospital.

The diagnosis was cardio-renal disease, decompensation the outstanding feature, and the admirable medical attendent, ordered a digitalis preparation in tablet form, three tablets three times a day. At the end of three days it was discovered that the nurse had given one tablet three times a day. At a later date when the supply of tablets gave out between the medical attendant's calls, the patient simply did without. On the first morning "George" came in the room and asked when the patient would be ready for his tub bath. The patient demurred at a tub bath and the matter was passed until the next morning when the opportunity was again offered. Being now an obedient patient instead of a dominating practicing physician, he was easily led to think this must be a hospital routine so he obediently (to "George's" suggestions) took hot tub baths regularly for ten days. At the end of that time the medical attendent, hearing of the tub baths, said he certainly would not have allowed the hot baths if he had known about it.

An absolute milk diet, good at first, gradually became stale and in about eight days palled—the patient stalled. The attending physician said he would add some five per cent vegetables. Here is where the dietician began to shine. At first, head lettuce twice a day, spinach twice a day. Then came a real treat (?) consisting of a dish of exactly thirty peas (half cooked). Then followed cabbage (half cooked), beets (half cooked), turnips (half cooked) and finally a cauliflower big enough to feed a cow (half cooked) was served. When a patient's nourishment is so very scant, it should be very tempting, so the patient may relish every bit of it. By this time the patient's patience began to wane and when the assistant superintendent made her morning call, the patient asked some questions. He wondered why the glass of milk served each meal could not be used to cream some of the vegetables so they would be palatable instead of disgusting. She would send up the dietician. The patient demurred, since he did not want to leave a reputation of being an old crank. The dietician came, a lovable young creature, and the patient at once became sorry he had ever complained. The patient stated his case and the dietician thought it could be done. That morning the attending physician came in, looked wise, changed the diet and the impending miniature storm subsided.

Perhaps hospital standardization has not gone quite far enough.

THE NEBRASKA HOSPITAL FOR THE TUBERCULOUS

It should not be necessary to tell the Nebraska medical profession that there is at Kearney a state institution for the care and treatment of the tuberculous; yet a personal communication from Dr. L. T. Sidwell, superintendent, indicates the need of a publicity and educational campaign to awaken the profession to a full realization of this fact. The bed capacity of this institution at the present time is 106; within a month a splendid new $100,000 hospital building having a capacity of fifty additional patients, will be opened.

During the past two years the average number of patients at the institution has been 102. Of these patients about 50% have been well advanced cases, about 45% moderately advanced cases and about 5% incipient cases.

This is a serious indictment of the profession and of the public. Too many advanced cases reach the hospital. Outside of care not much can be done for these patients. The hospital is intended primarily for the care and treatment of the curable cases.

The management is particularly anxious to make this hospital as useful as possible to the citizens and physicians of the state and in order that this may be fully realized the incipient and moderately advanced cases must be sent there.

"Citizens of Nebraska afflicted with tuberculosis are eligible for treatment in this institution. If they are without means of support, a certificate from the County Commissioners certifying to this, together with the application blank from a practicing physician is all that is necessary.

"If, however, the patient or his relatives can afford to pay from $10.00 to $30.00 a month for his maintenance, they cannot ask the state to assume the entire expense, and should pay in proportion to their financial ability. The maximum charge asked is barely half the actual cost to the state. The duration of treatment here depends upon the nature and circumstances of the individual case. If a patient delays putting himself under proper treatment until he has suffered extensive damage, the necessary period of treatment will be proportionately prolonged; and improvement or recovery, may be impossible."

VENTILATION

The effects of bad ventilation under extreme conditions is furnished by the example of what occurred on the "Londonderry" which left Sligo for Liverpool in December, 1848, with two hundred passengers. Lewes has described this tragedy in the following lines:

"Stormy weather came on, and the captain ordered everyone to go below. The cabin for the steerage passengers was only 18 feet long, 11 feet wide, and 7 feet high. Into this small place the passengers were crowded; they would only have suffered inconvenience if the hatches had been left open; but the captain ordered these to be closed, and—for some reason not explained—he ordered a tarpaulin to be thrown over the entrance to the cabin, and fastened down. The wretched passengers were now condemned to breathe over and over again the same air. This soon became intolerable. Then occurred a horrible scene of frenzy and violence, amid the groans of the expiring and the curses of the more robust; this was stopped only by one of the men contriving to force his way on deck, and to alarm the mate, who was called to a fearful spectacle: seventy-two were already dead, and many were dying; their bodies were convulsed, the blood starting from their eyes, nostrils and ears."

Until recently the causes of the ill effects of rebreathed air have been only matters of opinion. Along with the other great strides in sanitation and the collateral sciences of physiology, chemistry, etc., definite principles have crystallized out upon the important subject of ventilation. But research work has been almost unknown and the confusion arising explains entirely the multiplicity of devices for the ventilation of buildings.

A timely and valuable report has recently been made by the New York Commission on ventilation. This body of experts was really the direct outgrowth of Governor Sulzer's commendable action in providing a commission to formulate a sanitary code for New York and to reorganize the Department of Health. Already for years this has been an accomplished fact and today New York state has a model Department of Health whose good features have been copied far and wide.

An unusual galaxy of scientific men, engineers, physiologists, physicians and sanitarians have become interested and, as a result, laboratory facilities have been opened everywhere for carrying on the work. Enough statesmen and politicians have been interested to make the affair practical in a large sense.

Mrs. Anderson, a wealthy woman with philanthropic instincts, was found who wished to invest her money in some public service research. She underwrote the necessary expense and the governor was induced to give it quasi-official action which started the commission in a fair way toward great possibilities. The report has just been published and covers about 600 pages. For all those interested in the scientific ventilation of schools, factories, office buildings, homes, and other buildings this will be of great interest and invaluable for reference.

It is scarcely a quarter of a century since the science of ventilation became more than a mere collection of personal opinions. Carbon dioxide was thought to be poisonous to breathe and all the ill effects of poor ventilation were ascribed to its presence. Now we know that CO_2 is not per se an injurious gas but that the ill effects of poor ventilation may be due to other factors.

The concensus of enlightened opinion was summarized by the report of the Chicago commission in 1914.

"1. Resolved that carbon dioxide, as encountered in working practice, is not the harmful agent of major importance in expired air or air otherwise contaminated.

"2. Resolved that a temperature of 68 degrees Fahrenheit with a proper relative humidity is the proper maximum temperature for living rooms, artificially heated.

"3. Resolved that, in the present state of knowledge, it is impossible to designate all harmful factors in, or associated with, expired air.

"4. Resolved that from the standpoint of health, relative humidity is one of the important factors in ventilation."

The New York Commission on ventilation started from these premises and, it must be stated, carried on a vast system of research observations never yet undertaken by any scientific body.

Of all the methods studied only half a dozen stand out as worthy of continuation. Window ventilation alone may be discarded at once as inadequate. Window ventilation with gravity exhaust ducts of sufficient capacity is probably the cheapest, most easily mentioned and most satisfactory from all points of investigation. This contemplates board deflectors, glass deflectors, or patent deflectors, to prevent back drafts in order to make it work more perfectly. Window ventilation with fan exhausts received also favorable attention. In fact, it stands as the only other method which deserves serious consideration. Complicated machinery to mix the fresh air, or to heat it, and others to recirculate the used air after washing, elaborate suction fans, etc., all were found inadequate, expensive, and failing to compete with the simpler methods.

Humidified air wherever found was observed to be uncomfortable, stuffy and odorous. It did not lessen the mental attainments nor the growth of the mind of the pupils but it was objected to by the teachers and pupils. Besides it was found that increased humidity in the air caused a distinct higher incident of respiratory infection.

In the final summary we may conclude that either window ventilation or plenum fan ventilation, if the plant be properly designed and operated, yields generally satisfactory results from the standpoint of air conditions in the rooms. Window ventilation and gravity exhaust causes less motion of the air, more even distribution of the warmth and may keep the body entirely comfortable at 67 degrees Fahrenheit. The window ventilation and fan exhaust system keeps more currents of cold air going, causes more complaints of draughts and requires a temperature two degrees higher for comfort. Either one, however, will be quite satisfactory. The expense of the window deflectors and added radiation is offset by the expense of installing the fans and the maintenance thereafter. Methods involving the plenum air system, with expensive and complicated methods of mixing heated or chilled, washed or fresh air, are complicated and unnecessary.

"It appears that 68 degrees Fahrenheit (20 degrees Centigrate) is a critical temperature as regards both comfort and susceptibility to respiratory disease and the great advantage of window ventilation lies in the fact that reduced air inflow in the zone of occupancy permits this low temperature to be maintained. This method is most economical in coal consumption and the cost of operation."

In general, therefore, we are forced to conclude that window ventilation with ample direct radiation, window deflectors, adequate gravity or fan exhausts seems the most generally promising method for the ventilation of rooms, especially school rooms where local conditions permit.

"Avoidance of overheating is the one universal essential. Air change, direct flow, and all other factors are secondary. The most important article of ventilating equipment is the thermometer and however simple or complex an apparatus may be installed for air conditions, a constant and intelligent vigilence in regard to operation and overheating is the price of health and comfort."

—E. W. Rowe.

THE MIRACLE OF MILK

To go after such a low-lived ruffianly germ as the gonococcus, with injections of milk from the good old cow, conveys a suggestion of therapeutic romanticism which inevitably makes one smile. Nevertheless the evidence is convincing that in gonorrhoeal conjunctivitis at least, sub-cutaneous or intragluteal injections of boiled milk accomplish wonders. Pillat (Klinisch. Monatsbladder f. Augenheilkunde March 1923) gives an account of twenty-one cases, all except two of a severe type; including nine with ulceration of the cornea at the time the patient was first seen. The majority of these were cured within three to four days by two to four injections of milk which had been boiled from three to four minutes. Several patients received five or six injections. The average period before the eyes were germ free was seven days in eighteen of the patients. In three patients the milk failed to get rid of the germs. Only one eye in the series was lost. The milk should be used soon after boiling; 10cc., being injected intra-gluteally in adults, 3 to 8cc., in children from three to eight years; and 2cc., in infants. The first injection was given as soon as the diagnosis was made, the second on the next day; others if necessary were given at intervals of two to three days. By "cured" Pillat means that the germs disappeared not only from the secretions but from the epithelium of the conjunctival surface. Pillat insists that aside from rinsing out the conjunctival sac every five to ten minutes with normal salt solution, no other treatment was used until the conjunctiva was germ free. After this silver or alum was used to hasten the cessation of the conjunctival catarrah which always persists for some time after the germs have disappeared. Pillat feels sure that three to four minutes boiling is better than a longer period and that milk is better than any of the artifical milk products, such as caseosan. He lays great stress on the necessity of frequent cleansing of the sac because the germs which are cast off in great quantities immediately after the injections, are not all killed by the reaction; and if they are not rapidly washed away, the conjunctiva may become reinfected. This explains why the milk injections have given such comparatively poor results in gonorrhoea of the urethra. Any such rapid elimination and thorough cleansing as can be obtained in the conjunctival sac is evidently impossible in the urethra. It has also been found that the results obtained by milk injections in infantile gonorrhoeal ophthalmia are not especially good. (Pillat's series included no infants.) Pillat explains this by the supposition that infants are so prone to lie still with their eyes shut that in their eyes the germs have a better chance for reinfecting the membrane. This explanation does not strike one as very convincing, but the facts remain that in young infants the milk gives disappointing results while in older children and adults the results seem to be little short of marvellous. As a teacher the reviewer has always advised young physicians that if they should have the misfortune to get an adult patient with gonorrhoeal ophthalmia, to get rid of him as quickly as possible. In the light of the effects of milk it seems as if the result of a milk injection on two successive days could be awaited; and even if it is determined to ship the patient off as quickly as possible, at least one injection should be given immediately. This is the more imperative because the best effects of the injections are seen in the earliest stages of the disease, at a time when any other radical treatment, such as applications of silver, is strictly contraindicated. To cleanse the eye every five to ten minutes as recommended by Pillat seems to the reviewer excessively frequent. Nor can he advise using nothing else than milk and salt solution. It may be well to omit the ordinary ice applications, since the efficacy of the milk seems to depend to some extent upon the severity of the local reaction which it excites; but it would seem as if the 10% argyrol instillations every hour might well be retained in addition to the milk; and in the later stages, unless the infection is promptly cured by the milk; or if there are corneal complications, applications of 2% to 4% nitrate of silver or the sulphate of copper crystal should be used.

—H. G.

Half the pleasure of dying is going to be spoiled for most of us if any ignorant spiritualistic medium is going to be able to call us up at fifty cents a call.—Hygeia.

THE SAN FRANCISCO MEETING

The recent meeting of the American Medical Association, June 25th to 29th, was noteworthy in many respects and will long be remembered by those whose privilege it was to be present. Much credit is due to the local committees for the success of the meeting. Ample space was provided in the beautiful and spacious Civic Auditorium for all the scientific meetings, the House of Delegates and for the scientific and commercial exhibits. This permitted the fullest utilization of the individual member's time, enabling him to select the papers he wished to hear in the different sections, or to avail himself either of the scientific and commercial exhibits or of the moving picture theatre. Only the general meeting, where over 6,000 people listened to the address of President Ray Lyman Wilbur, was held elsewhere—in the Dreamland Auditorium. President Wilbur's remarkable, forward-looking address should be carefully read and pondered by every member of our state organization, for in this address are sketched with the clarity of an etching the big problems confronting organized medicine today.

The scientific program was excellent, covering much of present day advanced thought in medicine. As guests of the sections were Prof. K. F. Wenckeback, Vienna; S. A. Kinnier Wilson, London, Eng.; and J. B. Collip, Edmonton, Canada, who did much of the chemical work and developed methods for the extraction of insulin. Insulin was under discussion in the Society for Endocrinology, and in the section for Pharmacology and Therapeutics, and it is to be noted that the best opinion was that, although an epoch-making discovery, insulin remains not a cure but an extremely valuable adjunct in the treatment of severe diabetes and enhances rather than depreciates the value of rational dietetics.

Mention must be made of the motion picture theatre, where much subject matter was tersely and clearly presented by the means of lantern demonstrations and motion pictures, making use of the psychological fact that over ninety per cent of us are visualists.

Although the meetings of this, the largest of all medical organizations, are said to suffer from the disadvantages of a four-ringed circus, yet every member may employ his time in a full and interesting manner and come away with thoughts and inspirations which will enable him to better serve the community in which he lives. Much will have been gained if he returns with merely the determination to give wider publicity to the motives and ideals of this great organization whose constitution states: "The objects of this Association are to promote the science and art of medicine, and the betterment of public health." One heard much of the education of the public in its appreciation of the objects and value of scientific medicine, but nothing of "salesmanship." The doctor has no other vested right than that of the educational right to serve the public in the matter of the prevention and treatment of disease, and the preservation of the public health. As President Wilbur stated: "When every student in school receives some training in biology, the quack, the patent medicine cheat, the aggrandized rubbers and manipulators, and the knotted-string faddist will have less fertile soil for their mushroom activities." An unusual feature was the wide publicity given to the meetings by the Associated Press and by the local newspapers, which assigned special staffs to cover the sessions and devoted several pages daily to reports of the meetings. The sessions of the House of Delegates were fully attended, where matters of much importance were considered. The deliberations and enactments of this legislative body will be the subject of a later report to the House of Delegates of the State Association.

Any report of this meeting would be incomplete without mention of the multiplicity of entertainments and clinics provided not only in San Francisco but in other coast cities. Judging from the clinics in Los Angeles and the program of the Pacific-Northwest Medical Association given in Seattle, under the direction of Frederick Epplen, an ex-Nebraskan, the week prior to the American Medical Association meeting, additional work of much value was made available to those attending the San Francisco session, as well as to local men unable to be present at San Francisco.

Members of the Nebraska State Medical Association should give greater attendance to the meetings of the American Medical Association, not only increasing thereby their fund of medical knowledge, but especially their knowledge of the objects and workings of the "great central organization."

—A. D. Dunn.

"Glycerine sprayed into the nostrils with an atomizer often allays the burning sensation so distressing in acute coryza."

COMMITTEE ON PUBLIC ACTIVITIES

The Committee on Public Activities authorized by the House of Delegates will consist of Dr. E. L. Bridges, Omaha, chairman, Dr. Clyde Roeder, Omaha; Dr. E. W. Rowe, Lincoln and Dr. R. B. Adams, Lincoln.

—B. F. Bailey, President.

A TARDY ACKNOWLEDGEMENT

The readers of the Journal, as well as your editor, are under many obligations to Dr. Alfred J. Brown, Omaha, who as ad interim editor so very efficiently carried on the work of the Journal during the disability of the editor.

Acknowledgements and thanks are also due Dr. Brown for valuable assistance as literary critic rendered to the present editor, during the two and a half years he has been in charge of the Journal. The readers with the editor will regret that we are to have the services of Dr. Brown no longer. Dr. Brown has accepted an offer from the editors of Surgery, Gynaeology and Obstetrics to handle an abstract department in that valuable scientific magazine which will require all his spare time.

NEBRASKA PHYSICIANS ON THE SOUTHWEST COAST

During the editor's enforced sojourn on the Pacific coast he had the pleasure of meeting a number of medical men whose faces in former years were familiar in medical councils in Nebraska. All are well, all are doing well and all now are enthusiastic Californians.

Dr. D. C. Bryant (Omaha,) former president of the Nebraska State Medical Association and Dr. George L. Blanchard, (Omaha,) his associate, are doing an eye, ear, nose and throat business in the Broadway Central building, Los Angeles; Dr. W. B. Kern, (Hastings,) former superintendent of the Nebraska State Hospital at Ingleside is a neuropsychiatrist in the Brockman building; Dr. A. E. Mack, (Omaha,) former Professor of obstetrics at Creighton medical, does an obstetric business and has offices in the Broadway Central building; Dr. Hugo Chaloupka, (South Omaha,) is a surgeon with office in the Broadway Central building; Dr. F. E. Coulter, (Omaha.) formerly professor of nervous and mental diseases in Creighton medical, has a home at Santa Ana, but as consulting neurologist has office rooms in the Broadway Central building; Dr. J. Lue Sutherland, (Grand Island,) is doing eye, ear nose and throat work in the Consolidated building; Dr. George Roeder, (Grand Island,) has an office in the Brockman building; Dr. J. McKenzie Brown, (Friend,) is doing ear, nose and throat work with offices in the Brockman building; Dr. Newell Jones, (Omaha,) has a pediatric practice at Alhambra, but expects to have offices in Pasadena soon; Dr. J. A. Maronde, (Emerson,) is also in Alhambra in general practice; Dr. Ewing Brown, (Omaha,) once professor of gynecology, Omaha medical college, is health officer of San Pedro; Dr. F. H. Geer, (Columbus,) lives at Claremont and has not been in practice since moving to California nearly twenty years ago.

HYGEIA

Hygeia: A Journal of Individual and Community Health, published by the American Medical Association for circulation among the laity and with the object of educating the public in some of the easily understandable fundamentals of medicine is a journal of much promise. After carefully reading the first three numbers the editor unhesitatingly recommends Hygeia for a place in every family.

NOT SO BAD FOR THE CORNHUSKER STATE

The Nebraska profession may take some pride from this showing: The registration at the annual meeting of the Missouri State Medical Association at Joplin was 350; the registration of the annual meeting of the Nebraska State Medical Association at Lincoln was 411. Missouri according to the latest American Medical Directory has 5827 physicians and Nebraska has 1913 physicians.

THE SOCIETIES

Before the Madison County Medical Society, June 19th., Dr. D. T. Quigley, Omaha, gave an illustrated lecture at the Auditorium, Norfolk, on the radium treatment of cancer. On July 10th., at a meeting held at the Norfolk Country Club a six-thirty dinner was served after which Dr. C. E. Charlton, Supt. Norfolk State Hospital, read a paper on Neurasteema.

The Sioux Valley Eye and Ear Academy held its twenty-first semi-annual session in Omaha, July 9th and 10th. The scientific program occupied the first day and clinics were attended the second day.

HOSPITAL NOTES

The home of the late Congressman Dorsey, Fremont, has been purchased by Miss Laura Nielsen, trained nurse, and will be transformed into a hospital.

A dispensary has been opened in connection with the Lord Lister hospital, Omaha.

Dr. N. E. Davis, corresponding secretary of the Methodist hospital board met with the physicians of the North Platte valley at Scottsbluff, July 5th, to outline plans and purposes and to talk hospital organization of the new Methodist hospital approaching completion.

NOTES ABOUT THE DOCTOR

Dr. R. W. Hille, a recent U. of N. graduate has located at Comstock.

The village of Dunning in Blaine county is calling loudly for a physician.

Dr. Mattle L. Arthur, Omaha, has returned from a trip to Long Beach, Calif.

Dr. and Mrs. H. F. Gerald, Omaha, are spending some time at Boston and Cape Cod.

Dr. and Mrs. Paul H. Ellis, Omaha, spent the summer vacation at Leech Lake, Minn.

Dr. and Mrs. E. L. Bridges, Omaha, have returned from several weeks' sojourn in Maine.

Dr. H. H. Schultz has given up his practice at Sutton and moved to Colorado Springs.

Dr. Ernest Pfeiffer, for some years a practitioner at Nelson, has moved to Hartley, Iowa.

Dr. and Mrs. F. S. Owen, Omaha, have returned from a four months' trip to the Orient.

Dr. W. M. Green has moved from Beaver Crossing to Sutton succeeding Dr. H. H. Schultz.

Dr. E. T. Manning has been reappointed school physician of Omaha at a salary of $2,000.

Dr. C. C. Hardy has located at Ravenna and has purchased the equipment of Dr. G. J. Kadavy.

Dr. Ernest Thelen, Cedar Rapids, has taken his family by auto to the mountains for an outing.

Dr. B. K. Callahan, Wichita, Kans., has become medical officer of the veterans' bureau at Omaha.

Dr. Corwin Groom, Rupert, Idaho, visited the scenes of his early youth at Sargent, Nebraska, in June.

Dr. J. S. Livingston, Plattsmouth, spent a part of the heated spell at Minneapolis and other Minnesota points.

Dr. Lee Cowan and family, Falls City, who made an overland trip to Washington and New York have returned.

Dr. and Mrs. William Lete Shearer, Omaha, are spending the summer at Lake Gilmore, in northern Wisconsin.

Dr. W. R. Talboy, Newcastle, recently made a trip to southern California called there by the illness of his mother.

Dr. J. A. Tamisiea, Omaha, is the newly elected state commander of the Disabled Veterans of the World War.

Dr. and Mrs. Frederich Eiche, Lincoln, are spending the summer at their summer home at Pelican Lake, Minn.

Dr. Clyde Roeder, Omaha, was called to Los Angeles in July on account of the illness of his father, Dr. George Roeder.

Dr. C. L. Egbert, Hastings surgeon, was recently found guilty of homicide and sentenced to a term of fifteen years in prison.

Dr. and Mrs. J. F. Langdon, Omaha, spent some time at Lake Minnetonka recently and the doctor also visited the Mayo Clinic.

Dr. Emelia H. Brandt, Omaha, is the new president of the Business and Professional women's division of the Chamber of Commerce.

Dr. Walter G. Hiltner, Shanghai, China, visited in Nebraska during July. Dr. Hiltner is a Lincoln product, his parents still living there.

Dr. Charles Moon, Alma, has gone to Germany for a period of study in obstetrics and gynecology. His wife and children accompanied him.

Dr. W. H. Newcomb, Chicago, representative of the American College of Surgeons, was in the state recently on business connected with the college.

Dr. J. V. Hinchman, for several years physician to the Soldiers and Sailors Home, near Grand Island, has resigned and will return to Blair, his former home.

Dr. Alan R. Moritz, a recent University of Nebraska College of Medicine graduate and a Seward product, has entered upon an interneship at Lakeside hospital, Cleveland.

Dr. H. W. Wright, formerly medical officer of the veterans bureau at Omaha who was transferred to the Bellevue vocational school, has resigned and will leave the service.

Dr. Wm. P. Haney, Omaha, who recently submitted to an operation for appendicitis and who had gone with his family to California for a period of recuperation, has returned.

Dr. A. I. Whitehead, Holdrege is taking special eye, ear, nose and throat work in Chicago and will devote himself to this line hereafter. He has purchased the equipment of the late Dr. W. D. Shields.

Dr. G. J. Kadavy, inventor of a device for regulating the flow of anaesthetics, has given up his practice at Ravenna and will for a time devote himself to the introduction of the invention to the profession.

Among the Nebraska physicians attending the A. M. A. meeting at San Francisco were: Drs. A. D. Dunn, R. W. Fouts, A. F. Jonas, Chas. McMartin, J. E. Summers, B. B. Davis, A. Sachs, Delmar Davis, J. P. Lord, J. B. Potts, H. M. McClanahan, W. N. Anderson, Omaha; Drs. A. R. Mitchell, D. D. Sanderson, H. J. Lehnhoff, H. W. Orr, Lincoln. Our informant unfortunately could not give us the names of out-in-the-state physicians who attended.

HYMENEAL

Dr. C. A. Medlar and Miss Louise Nagel, Verdon, were married June 7.

Dr. B. B. Sedlacek and Miss May Fixa, Omaha, were married June 20.

NECROLOGICAL

Dr. Alexander H. Miller, Washington University Medical School, 1878, a pioneer physician of Hitchcock county, died at Culbertson, June 20, aged about 74 years.

Dr. Ruth M. Wood, an early day woman physician of Lincoln, for the past twenty-five years a resident of Los Angeles, died at the latter place in June.

Dr. Hamilton Meade, an early day physician of Cass county, but for years a resident of Portland, Oregon, died at the latter place after an extended illness aged about 72 years.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, September, 1923. No. 9

CONTENTS

Page

Certain Practical Points Concerning the Diagnosis and Treatment of Heart Disease, James B. Herrick, M. D., Chicago, Illinois 301
Focal Infection in Neuropsychiatry, G. Alexander Young, M. D., Omaha, Nebr. 307
The Doctor's Relatives, Lucien Stark, M. D., Hartington, Nebr. 310
The Prevention and Cure of Pneumonia, F. A. Wells, M. D., Axtell, Nebr. 313
A Rational Treatment of Pneumonia, F. A. McGrew, M. D., Hastings, Nebr. 316
Local Anesthesia, J. M. Willis, M. D., McCook, Nebr. 324
Constipation in Children: Etiology and Treatment, E. S. Wegner, M. D., York, Nebr. 327
Hemorrhage of the New Born, Floyd Clarke, M. D., F. A. C. D., Omaha, Nebr. 329
Report of a Case of Megacolon, H. M. McClanahan, M. D., F. A. C. P., Omaha, Nebr. 331

Page

EDITORIALS—

Giving Away the Grand Island Soldiers' Home 334
The Old Swimming Hole 334
Special Article—The Distribution of Insulin 335
Publicity Committee Chairmanship 338
Polemics and Evolution 338
The Dean of the Omaha Profession—Wellington S. Gibbs, M. D. 338
Preparing Manuscript 339
Omaha Meeting, Missouri Valley Medical Society 339
Tri-State District Medical Society Des Moines, Oct. 29-Nov. 1 339
Clinical Congress 339
Notes About the Doctor 340
Hymeneal 340
Necrological 340

CERTAIN PRACTICAL POINTS CONCERNING THE DIAGNOSIS AND TREATMENT OF HEART DISEASE.*

James B. Herrick, M. D., Professor of Medicine, Rush Medical College, Chicago, Illinois.

I wish to thank the members of the Association for their courtesy in inviting me to address them. I assure you I appreciate the honor very much.

What I shall try to do this afternoon is to speak in simple manner as to practising physicians, not to specialists, concerning a few practical points in the diagnosis and treatment of heart disease. I shall aim to be brief. I shall perhaps be somewhat dogmatic. If I assume the tone and attitude of a teacher you will pardon it, I trust, in one who has the dogmatic and pedagogic habit firmly fixed after more than thirty years of teaching.

I shall first speak of what is known as sinus arrhythmia. I am sorry I did not hear the paper of Dr. Smith this morning. It may be I shall be repeating something of what he said.

In order to make my points clearer, I place on the board a simple diagram that illustrates the present day conception of the origin of the heart beat. In the right auricle, close to its junction with the superior cava is situated the sino-auricular node, or what has been well called the pacemaker of the heart. It is in this little mass of tissue that the heart beat has its origin. From there the impulse is sent through the auricle, reaches a relay station called the atrio-ventricular or a. v.

---

*Abstract of an address given before the Nebraska State Medical Association, Lincoln, May 16, 1923.

node, and then traverses a short bundle known as the bundle of His, which straddles the septum of the ventricle, separating into two branches—the right and left—and is then distributed to the heart muscle inducing ventricular contraction. If we represent the heart beat as does Thomas Lewis, we have this diagram (illustrates on blackboard).

What is meant by sinus arrhythmia is an irregularity in the heart's action that has its origin in this sino-auricular node. For practical purposes and the purpose I have in mind this afternoon, we may regard sinus irregularity as a physiological process. The vagus nerve has a marked influence over this sino-auricular node. Such simple, normal acts as breathing influence the rate of origin of these impulses. If you watch a child, you will frequently find that with respiration the heart varies in its rate. With inspiration it becomes rapid, and with expiration it slows up, through the influence respiration exercises on the vagus nerve and the sino-auricular node. Under these circumstances the impulse is not generated in the perfectly rhythmical manner I have represented, but with intervals of varying length between beats.

Why do I bring this before you? I did not at first believe that Mackenzie was right when he said that the grievous error was not infrequently made of calling this physiologic rhythm a disease of the heart. But in the last four years three or four instances have come to my notice in which physicians had honestly made the mistake of calling this respiratory irregularity a heart disease. One was in an adult in whom it was looked upon as auricular fibrillation by an interne in the hospital. Two children were brought to my office because of supposed myocarditis. The hearts were normal in every respect but the rate varied a little. It was, however, nothing but this respiratory variation. One little fellow of seven or eight years had been confined to bed for three months with an ice pack for suspected serious myocardial involvement. During an attack of tonsillitis it was first noted that his heart action was irregular. It had probably been so since birth.

I am justified then in calling attention to the fact that there is this normal variation in the heart, particularly in children, that is perfectly physiologic. The lesson is that when we run across an irregularity of this sort, we should carefully study the heart and its action and be sure we do not regard as a serious heart condition this simple regular variation.

The other day Dr. Gilbert, of Chicago, showed me some diagrams of his observations on the hearts of aged people. He found in some of these that there was a definite respiratory arrhythmia resembling that seen in children.

The second point concerns extrasystole, or the premature contraction. The heart beat normally originates, as has been described, in the sino-auricular node. But there may be a sensitive focus in the musculature in some other part of the heart in which may start an impulse that will induce the auricle or ventricle to contract ahead of time. This is the extrasystole or premature beat.

While it is not my purpose to go into the question of how to diagnose it, there are certain characteristics of the premature beat that you can recognize without any instrument of precision, without any electrocardiograph, without any polygraph.

(Certain clinical features of extrasystole—the prematurity of the beat, the long pause, the altered heart tones, etc. were briefly considered with diagrams.)

All this is preliminary to what I wish to say about extrasystole, which is this: In the more recent literature the premature beat which often causes what the doctors used to call the intermittent pulse, is looked upon as insignificant. We are told by the authorities and told correctly, that extrasystole per se is not dangerous. That certainly is true. The small hypersensitive focus that sets off the beat ahead of time is not necessarily dangerous. But while per se an extrasystole is not dangerous, we must nevertheless entertain a wholesome respect for it. We cannot carelessly dismiss a premature beat and say, "That's nothing". It may be due, and in the majority of cases is due, to some toxic influence, on the removal of which the irregularity ceases.

A doctor came into my office and said, "Do you wish to get a good tracing of an extrasystole?"

"Certainly. Where's your patient?"

"I am the patient."

"Come in tomorrow; we are busy."

"I shall not have it tomorrow."

"How do you know?"

"I am going to stop smoking."

This is a good illustration. In that case it was tobacco. In another case it may be too much tea, coffee, intoxicants or worry or fatigue. You may cause it with digitalis. Digitalis given until an extrasystole is produced does not mean heart disease. It means you have irritated or poisoned the heart temporarily. That is why the writers are correct when they say that in itself the premature beat is not a cause for extreme worry.

But this irregularity may be associated with definite organic disease of the heart. It may at times be found in cases of hypertension as one evidence of beginning failure of the heart muscle, just as is the cardiac asthma that is beginning to make its appearance. You may find it in patients with attacks of angina, or in cases of pneumonia or diphtheria.

Do not jump to the conclusion that of all the cardiac irregularities the one to which you need pay least attention is the premature beat. Admitting that usually it is harmless and easy to get rid of by simple attention to the rules of hygiene, by giving rest, etc., yet once in a while it is one of the signs of a myocardial lesion that threatens a cardiac breakdown. Mackenzie wrote in one of his earlier books that if a patient with pneumonia has a premature beat, he will die. He has taken that statement out of his later editions for it was too broad. They do not always die, but in a disease like pneumonia or diphtheria, an extrasystole occasionally means serious organic change.

The third point: I wish to say a few words with regard to syphilis of the aorta. I prefer not to speak of syphilis of the heart. You know syphilis delights to attack the nervous system and so we have tabes and general paresis. It also delights to invade the circulatory system, and it picks out the first part of the aorta as its point of most serious attack. This is an unfortunate thing for the patient. It is unfortunate because if the syphilis of the aorta goes uncorrected, it is apt to weaken the wall of the aorta which may yield in dangerous dilatation. It is unfortunate also because that part of the aorta is the near neighbor of two important structures—the aortic valves and the coronary arteries, and it is frequently found that syphilis of the first part of the aorta is associated with disease of the aortic valves leading to a leak, or with disease in the coronary arteries. These are serious accompanying conditions.

Now is it not our duty to try to recognize syphilitic aortitis early? It does not show much diagnostic acumen to recognize a well-developed aneurysm. If we cannot tell it by ordinary methods, we call in the X-ray to help us. But that is too late to do much good. We can often help these patients, but we cannot do anything as a rule that amounts to what we can call a cure. But we could do more good if we had had the opportunity and the keenness to recognize this condition in its earlier stages.

Is there any way by which we can recognize early syphilitic aortitis? One must admit that in many cases it is not possible to recognize it. Besides, many patients with this trouble never come to the doctor, because they have no symptoms that lead them to come. But patients have come to you and to me and have slipped through our hands, in whom either because of superficial examination or erroneous conclusions, the aortitis that was luetic in character was overlooked and at a time when some good might have been done had the condition been recognized.

In what way can we recognize it? One of the ways is by investigating more critically the complaint of pain. We are all a little too prone to slur over some of these complaints of pain in the chest, particularly if the patient happens to be a neurotic individual. We talk about muscular rheumatism, pleuritic stitch, "cold" and arthritis. But this patient may complain of a soreness under the sternum, or a slight tight feeling. He may give us a hint that the pain is of an anginal character when he says it is worse on walking or tends to go out into the left arm. We should pause and examine him more carefully and go more minutely into his history. We may find there is a murmur systolic in character—possibly even a faint diastolic murmur at the base. We are apt to pass too lightly a systolic murmur at the base as accidental. We say we have no right to diagnose a systolic murmur as indicative of disease of the aortic valve "unless it is rough". But that pain and that slight murmur may mean the beginning of a luetic aortitis. Also a ringing aortic closure may sometimes be an early manifestation.

If we are able to percuss as some claim they can do—I confess I cannot do it always—we may be able to make out a slight increase in the area of aortic dullness. The X-ray may show increase in the size, or a distorted contour, of the vessel. Then the patient with this murmur is apt to be sound and without sclerotic vessels; his heart is not large, and he has never had rheumatism. He may be a patient whose history makes syphilis a certainty or a strong possibility. So we make our Wassermann test and it is positive. We have finally made out a strong case for the diagnosis of a syphilitic aortitis. It is always tragic, with much of the pathetic about it, when a patient walks into the clinic with an aortic leak or aneurysm and tells you he went to a doctor four or five years before with pain, a history of syphilis that awaited discovery but was dismissed by the physician after a cursory examination, and was told there was nothing wrong. To think that the golden opportunity for treatment was missed!

Something may be done in the way of treatment. Mercury, iodid of potassium, arsenic can be given. There is a caution with regard to giving any of these drugs, and particularly the arsenical preparations. They must not be given in too large doses because there is danger in these cases of weakening the wall of the aorta before reparative changes occur. The Herxheimer reaction is a reality. Really the time to treat these patients is before they have had their aortitis. In our hospitals and ambulatory clinics a great deal of good is being done by the Department of Syphilis, that is taking hold of and giving these patients intensive, thorough treatment at as early a stage as possible. We cannot prove what they are preventing but it is reasonable to hope and believe they are preventing the development of many cases of aortitis with its direful consequences.

In the fourth place I speak of three or four stray and disconnected facts concerning the use of digitalis. The first fact is, it is not bad practice—here I am speaking dogmatically—to give digitalis when heart failure is beginning, even though the blood pressure be high. There is an impression that will not down that if the patient has high blood pressure you must not give digitalis. That is certainly wrong. When you have a patient with chronic nephritis or hypertension who is beginning to get short of breath on going upstairs or who has cardiac asthma at night, do not hesitate to give digitalis. You are not going to cure his disease, but you are giving good treatment that may carry him along for many months or years. Secondly, digitalis is of some use in fevers, when the heart is weak and rapid. I am willing to give it, and do give it in such diseases as pneumonia, in spite of some experimental work that seems to show it is of no use there. What I am trying to do is to combat the notion that has gotten into the literature that there is just one condition in which digitalis is worth something, and that is auricular fibrillation. It is worth a great deal there. It is the drug above all others you should use there, but it has a place in such conditions as I have mentioned. Thirdly: Every once in a while when digitalis is advised the doctor says: "How long shall I continue this? I suppose two or three weeks and then stop?" One cannot give an answer as to how long in an individual case the drug should be continued. But there are patients with fibrillation and muscular disease of the heart to whom I have given it for months, and even years. One need not hesitate to say: "Give it just as long as necessary." I do not mean it should be given in huge doses. But many of these patients are going to get along, and get along well, only when getting their digitalis and over long periods of time. I doubt the wisdom, except in extreme cases, of giving huge doses of digitalis intravenously. I throw that out as a personal opinion. It is necessary at times in emergencies to digitalize your patient as promptly as possible and to give him large doses intravenously, but that necessity does not arise very often.

Lastly concerning digitalis, you must individualize in its use as to how much to give your patient, how long to give it, and what preparation to give. The preparation of digitalis a physician should give is what he knows by experience does the work for him. I remember when Dr. Hyde was asked, "What is the best preparation of mercury to give in syphilis?" He answered, "The one you know the most about." I feel somewhat the same way about digitalis. If you are used to giving one preparation and get results, give it, but give enough to get results. As another man has expressed it: "You can drive a nail with a hammer or hatchet. If you have the hatchet, use that. If you have the hammer, use that."

The fifth point concerns quinidin. It is certainly a most remarkable drug. Its effects are dramatically startling. But its usefulness is very restricted. In the first place, it is of value in only about 50 per cent of cases of complete irregularity of the pulse. Where the pulse, as in mitral stenosis, has become irregular, it has been found that quinidin will sometimes in a marvelous manner stop that irregularity and make the heart come back to its normal, regular slow rhythm. That happens in one-half of the cases. Of this 50 per cent in which it is successful, the effect is only temporary in the great majority of instances; so that the real permanent result is comparatively rare.

Quinidin is a remedy that is potent for ill. It is a dangerous remedy to use in many cases. Shock, collapse, cardiac failure, thrombosis with resulting emboli are unfortunate results that occasionally follow its administration. So that Sir Thomas Lewis advises that we do not use quinidin unless we have the patient under the most careful watch—preferably in the hospital where he is under electrocardiographic control.

It seems, sometimes at least, a sort of useless performance to give quinidin to a patient simply because his auricle is fibrillating. There are many patients with fibrillating auricles who are up and about and living fairly active, useful, contented lives, and they are no better when you give quinidin even though the cardiac rate may become slower and more regular.

The last point concerns obstruction in the coronary artery. For the last ten years every time I have had a chance I have been doing a little missionary work along the line of trying to put on the map acute obstruction of the coronary artery as a clinical entity. The reason is this: For a long time I had the conception which most physicians had that obstruction of any large branch of a coronary artery meant sudden death. That is perhaps true in the majority of instances. But I have learned that a patient may have an acute obstruction of the coronary artery, or some of its larger branches, and may live for days, for months, or may ultimately recover functionally. The reason why these patients were looked upon as doomed to a sudden death was largely because the coronary artery was considered to be a terminal, or end artery. There were said to be no anastomoses that amounted to anything between the right and left branch. If, therefore, the coronary artery was obstructed, as in the descending branch of the left coronary, all that portion of heart muscle nourished by it became inefficient. It was thrown out of commission. The heart must of necessity stop. There were no branches to help keep up the circulation.

Anatomists have shown there are anastomoses, that are not negligible. Pathologists have shown that some patients who have had obstruction of the coronary artery have lived for months and years, and that the infarcted area of the heart has scarred over, and while it has not itself been able to contract in a normal way, it has held and has not yielded in a serious aneurysmal dilatation; and the patient has died from some other disease. Contrary to Cohnheim, other experimenters have had their dogs and other animals live for months and years, even after ligation of large branches of the coronary. Physicians have had patients die with symptoms suggestive of this accident and at autopsy months after an old obstructive lesion has been found.

If these things are true it must also be true that the obstructive accident must have given rise to certain clinical symptoms and we should try to recognize them. I have divided these acute obstructions into four groups, of course more or less artificial.

The first is where there is practically instant death. That is the group Krehl discusses at length. These are the patients who die instantly—heart and respiration give out at the same time. There is no distortion of the features, no edema of the lungs. The machinery instantly stops. The second group includes the cases of sudden death—a typical angina pectoris death—cases in which you are summoned to go to the house at once, and perhaps you reach there, in thirty minutes, the patient is dead—severe pain, collapse, ashy features, and the sufferer clearly in articulo mortis from the onset of the attack. Then there is a third hypothetical group, where small branches of the coronary may be obstructed. Perhaps these individuals have no pain that leads them to come to a doctor. We cannot make a diagnosis because they do not ask for help. A lesion of this kind explains some of the obscure slighter pains patients speak of. There must be, it seems to me, instances of this type.

The fourth group, of which I wish to speak particularly, is the one in which the obstruction occurs, usually by thrombosis, and yet the patient lives for hours, days, months, perhaps years, and may make a recovery so far as life or even function is concerned. These cases have a fairly definite symptomatology. In many instances they permit of a diagnosis that is reasonably accurate, comparable to our diagnosis when a patient has an obstruction in a blood vessel of the brain. We may not be able to localize the lesion, but we can say it is due to an obstruction. These are patients who have the conditions that make for thrombosis. The coronary vessels are usually sclerotic. At some point the blood vessel has been narrowed, the wall is rough. Whether infection comes in to play a part I do not know. Some cases I have seen have made me think it does.

The thrombus forms and the patient has a sudden pain. If he has had angina pectoris, he will tell you this is the worst attack he ever had. It may have come on while he was quiet. Perhaps it occurred in the night. It is not necessarily one of those paroxysms of pain that come on exercise. This pain is severe; it is substernal—sometimes even as low as the epigastrium. It may last long, even to twenty-four hours or more. You give the hypodermic of morphine, and another one, and still the patient is having pain. The patient's countenance may be ashy grey. Perhaps he vomits. The pain may be epigastric and with the other symptoms may lead one to say: "Here is some accident in the abdomen". In not a few instances the abdomen has been opened by the surgeon, because of the suspicion of a ruptured gall-bladder, perforated duodenal ulcer, or acute pancreatitis. The possible close resemblance to some abdominal accident should always be remembered.

If the blood pressure has been high, it will now be found lower. The average previous pressure of 200 may have dropped 60 points in a few minutes or an hour. The pulse may be almost imperceptible. It is usually rapid; sometimes it is slow. It may be irregular. If you listen for the heart tones you may be startled because you cannot hear them, or because of their faintness. The apex impulse is very feeble. The patient may suffer from dyspnea or may not. In many cases, there develops edema of the lung, with rales. There may be a confusing acute emphysema of the lungs. After a day or two in some instances there may be heard a pericardial friction. This is over the myocardial lesion the result of the obstructive accident.

If with these symptoms thus briefly encountered you can eliminate other causes and if you have a patient who is known to have had angina or cardiovascular conditions that would make for this accident, you are justified in making a probable diagnosis of acute coronary obstruction with myocardial infarction.

Your prognosis is doubtful. Many die. But death may be long deferred. I heard last week of a patient I had seen who died at the end of three years. He had to spend months in bed because of the serious condition that followed the acute obstruction. But finally his heart pulled together and the remaining musculature was able to do a good deal of work. He had nearly three years of relative comfort and usefulness, and then he died suddenly—a typical anginal death. Some develop edema of the lower extremities and die in the familiar manner of a broken compensation.

What I am trying to demonstrate is that this condition is a clinical entity. If we think of it, we shall recognize it often. We cannot do much in the way of specific treatment, but we can at least make a more sensible prognosis. We can at least insist upon more strict rest in bed and for a longer period of time than is common. I have seen these patients who have had this lesion who would get out of bed on the second day and try to walk about! Some are able to do it, but it is unwise. Prolonged rest with the cautious use of digitalis may result, as I have seen in several instances, in a reasonably good cure of the condition—not a cure in the sense that the heart is restored to its old integrity but a scarring which leaves the heart capable of doing its work in a fair way. Not all patients with cerebral thrombosis die of the accident or are permanently paralyzed. No more so are all the victims of coronary thrombosis permanently disabled.

I have seen acute obstruction of a coronary artery so many times that I tell my friends they must call me down if I get too enthusiastic over it. I sometimes fear—as the boys say—I am becoming "nutty" over it. Yet just about the time I begin to think we are going crazy and seeing too many cases, one of our patients on whom we have made such a diagnosis dies and we get a post-mortem, and there it is!—there is the artery with its obstruction and the old resulting myocardial lesion, and we say, "We were right" and go on again, looking for, and finding, more cases.

There is in these cases a certain electrocardiographic control that may be of some value in the future, but according to promise I say nothing about that.

These then, are the six points I wish to bring before you:

1. Sinus arrhythmia. Remember if it is respiratory in character, it is physiological.

2. Extrasystole. Nearly always the premature beat is toxic or neurotic and does not mean much, but look out for the one that means something.

3. Syphilis of the aorta. Try to recognize it in the early stages when you are able to do some good.

4. Digitalis. Do not be afraid to give it when it is needed, even with high blood pressure, and at times, in fevers. Do not be afraid to give it for a long period of time and give it in your own way, and not according to the way of some one else.

5. Quinidin. It is of a limited value and must be given very cautiously.

6. Coronary obstruction of an acute character. Many times—nearly always—fatal, but in a certain proportion of cases giving a clinical picture that permits you to make a diagnosis and prognosis and to institute a treatment that is rational.

FOCAL INFECTION IN NEUROPSYCHIATRY*.

G. Alexander Young, M. D., Omaha, Nebr.

It can be said that the progress of medicine coincides with the development of a scientific etiologic point of view. Description of disease phenomena is a primary and necessary step but not until we have elaborated in regard to any disease, an established relationship of cause and effect are we in a position to practice rational therapeutics.

In respect to certain diseases neuropsychiatry has remained pretty much in the descriptive phase. An example in point has been dementia praecox which represents a group of mental syndromes described and correlated during the past twenty-seven years by Kraepelin. A diagnosis of dementia praecox has been almost tantamount to an intellectual death warrant. Treatment was ineffectual in the absence of an established etiology. Recently statements of remarkable percentages of cures have been made as a result of applying the hypothesis of focal infection to the treatment of this disease.

The same facts hold true with many other types of nervous disease, both organic and functional. The acquisition of well tested hypotheses of cause are of signal value not alone in treatment but in stimulating further research. Morbid endocrinology, psychogenesis through defective adaptation of the primary instincts to the environment, and focal infection are three avenues of approach to problems of nervous disease which offer a scope for far-reaching investigation. Each conception has its enthusiastic advocates and its equally determined opponents. Out of the conflict of views we can hope to obtain facts that will be accepted by all and added to our fund of proven knowledge.

Focal infection has been intensively studied during the past ten years and its comparatively recent application to neuropsychiatry has been attended with many happy results. It seems, therefore, that a brief resume of the relation of focal infection to certain nervous and mental diseases might be of value.

Rosenow, in 1916, noted the selective pathogenic activity upon various organs of the body, of streptococci originating from hidden foci of infection. Stressed at first in the etiology of acute and chronic arthritis, the principle of selective localization has been applied in the study of the causation of many other morbid conditions. Nephritis, endocarditis, gastric ulcer, appendicitis and gallbladder disease have become familiar to you as having a probable origin in focal infection. Since 1918 Rosenow has investigated the relationship of various infections of the nervous system or nervous syndromes to foci of infection in the teeth, tonsils and sinuses. He believes he has demonstrated that streptococci grown under conditions of low oxygen tension as in deep pyorrhoeal pockets, apical abscesses, deep tonsillar foci, or with a corresponding special laboratory technique, may have a selective affinity for various parts of the nervous system, as in multiple neuritis, in infectious transverse myelitis, in encephalitis and in the poliomyelitic complex. He has cultured organisms from patients suffering from nervous system infections and shown that while in intravenous inoculations of streptococci derived from gastro-intestinal or arthritic patients very few rabbits showed invasion of the central nervous system; inoculations of the streptococci from nerve cases gave invasion of the nervous system in 70% of rabbits inoculated. He has been able in rabbits to reproduce the symptoms, similar or identical lesions microscopically and to recover the organisms from the diseased tissue and to indefinitely repeat the process. His recent work in the epidemic hiccup, tachypnoea and torticollis spasm of encephalitic origin in which he reproduces similar spasmodic movements in rabbits inoculated with cultures from the patients, is a striking example in point.

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

The practical application of the principle of focal infection with selective localization in the nervous system to daily neurological work has been productive of excellent results, especially when combined with other known and proved methods of treatment.

In my experience the infectious foci have been found most frequently in the teeth, next in the tonsils and then in the sinuses. I do not feel competent to pass upon the intestinal tract as a principal focus, though, as I shall mention later, it has been stressed by various authors. Let me cite cases in illustration.

CHOREA

Chorea has ceased to cause me anxiety since I have carefully eradicated all foci of infection at the earliest possible date in the treatment. Only rarely, in view of acute cardiac complications, do we need to postpone a tonsillectomy. Removal of infection, cool wet packs, aspirin or salicylates, and rest in bed frequently result in recovery in two to three weeks time.

C. A., boy age 12, was seen Sept. 5, 1922, suffering from a chronic chorea of two years' duration. He had been in bed several months at the onset of the trouble but had been up and down since. Choreiform movements were of moderate intensity. He was not able to go to school. He was somewhat anaemic, there was no cardiac involvement and his tonsils were said to have been removed at the age of five. Examination of his throat showed a congested lump of tonsillar tissue in the lower angle of the right fauces. This was removed and in two weeks with rest in bed all movements had ceased. At the present time his mother reports that he is well and has attended school all winter.

HEADACHES

Among the many causes of headaches we have tonsillar and sinus headaches. It is striking the way persistent and excruciating headaches may disappear when infected tonsils are removed. A periodic agonizing headache of four years' standing in a woman of 30 years of age, disappeared immediately following tonsillectomy with a gain of forty pounds in weight in six months time. Infected antrums, not necessarily empyemic, may cause syndromes identical with typical migraine. and radical drainage of the antrums will cure the headache. An interesting symptom of these antrum cases is the drowsiness or sopor which patients complain of and which often resembles a narcolepsy. The patients will go to sleep playing cards or at a theatre and are much humiliated by it.

TRIGEMINAL NEURALGIAS

Neuralgias in the distribution of the fifth nerve and also in the occipital nerves should call for the closest examination of the nasal sinuses and teeth. Neuralgia of a tic doloreux type of years standing has been caused by antrum disease and has been cured by antrum drainage. A tic doloreux in a woman of 35 apparently caused by dental pathology and aggravated by simple extraction of teeth was practically cured by a thorough removal of dental pathology by the Shearer method of external alveolarectomy. It is my belief that in tic doloreux we have an infective neuritis of the fifth nerve as the original pathology. And here I would like to emphasize that I have become convinced that the best way to remove dental pathology is through external alveolarectomy and that simple extraction is often useless and may be dangerous.

SEROUS MENINGITIS

In a paper last year on the Medical Aspects of Brain Tumor, I mentioned cases of pseudobrain tumor and of serous meningitis as causing difficulty in diagnosis. Such cases I believe are not infrequent and while often due to acute infections, as in whooping cough, they may be due to focal infection. A case of a woman of 35 was described in which choked disc, headache, vertigo and cerebellar symptoms suggested a cerebellar tumor but which cleared up following removal of several abscessed teeth. A case seen with Dr. Banister of a woman of 45 with marked choked disc diminished vision, headache but with no localizing symptoms cleared up rapidly following removal of infected teeth [and antrum drainage.]

SCIATIC NEURITIS AND LUMBAR MYOSITIS

Rosenow has demonstrated in animals the development of myositis and sciatic neuritis and multiple neuritis following the inoculation of cultures from sciatic and neuritic patients. Several years ago I used to see more sciatica than I do now and I have thought that the reason may be that dental infection is more universally recognized.

EPIDEMIC ENCEPHALITIS

While the etiology of this disease is not yet proven I have been impressed with the fact that in certain cases of typical encephalitis the removal of abscessed teeth or the cleaning up of sinuses and tonsils has had a happy result upon the condition of the patient. One such case may be quoted. Mrs. W., age 47, was seen in 1920 suffering from epidemic encephalitis associated with severe myoclonic contractions of the abdominal musculature and acute neuralgic pains over the same region. This condition persisted for approximately a month until it was found that many of her teeth were abscessed. Following an external alveolarectomy the pains and myoclonia quickly disappeared and the patient made a general improvement which has been maintained.

Rosenow's present method of treatment by immune horse serum based upon his hypothesis of a streptococcic etiology harmonizes with these observations. I have been favorably impressed by the apparent action of Rosenow's serum in three acute cases and believe that it should be used in association with the thorough eradication of focal infection as offering the most effective treatment at our disposal today.

NEURASTHENIC SYNDROMES

Probably very few medical terms have been so loosely used as neurasthenia. Under this heading have been grouped a number of syndromes of varying origin such as the psychogenic states of anxiety neurosis and hysteria, the vagotonic and sympathetico-tonic syndromes, toxic states of different kinds and mild cyclothymic depressive psychoses. Focal infection accounts for quite a number of these toxic neurasthenic conditions marked by mental depression, hyperirritability, fatigue and various dysfunctions of the bodily systems. Very frequently we find both psychogenic and toxic factors at work and both require treatment.

PSYCHOSES

For the past five years, Cotton at the Trenton State Hospital, New Jersey, has been carrying out intensive work in eliminating focal infection among the insane. In a paper presented before the American Psychiatric Association in June, 1922, he gives a resume of results of four years' work in 1400 successfully treated cases. Detoxication through elimination of all primary and secondary foci of infection has been the goal aimed at. He finds that dental disease is the most frequent source of the infection. Tonsils and sinuses follow next but the list of foci removed includes the colon, the cervix uteri, the seminal vesicles and gallbladder. Autogenous vaccines and immune antistreptococcic sera are used.

His statistics are based upon the treatment of the functional psychoses, that is, dementia praecox, manic depressive insanity, paranoia and paranoid states. For the ten years prior to 1918 the hospital averaged 37% of recoveries in these cases. During the years 1918-1922, covering the period of active detoxication treatment, the recovery rate advanced from 37% to 80%. Of 1400 cases successfully treated during these four years only forty-two patients have returned to the hospital and continued treatment. Such a report as this has stimulated great interest and must be carefully checked. If confirmed it marks a decided advance upon previous results.

In my own experience with the psychoses that are susceptible of treatment in a general hospital I can report an increased recovery rate. After twenty-two years psychiatric experience, one acquires a prognostic sense based upon that experience. The last four years in a number of cases, I have been agreeably surprised in seeing apparent dementia praecox patients make an unexpectedly good recovery following removal of foci of infection. We expect manic depressive patients to get well after a lapse of a few months but to see paranoid states, catatonias and depressive stupors recover in a few weeks time has been contrary to the accepted order of things. A few cases follow:

Miss A. S., 42, farmer's daughter, was seen May 19, 1920; complained of people throwing electricity into her body; of people talking about her because she did not buy bonds, that men in the store call her a whore, that she had hidden herself in a closet because a neighbor hearing the reports of her character was about to assault her; etc. These delusions of paranoidal type had been present for six months and were associated with auditory illusions and hallucinations. The patient was quiet, cooperative, laughed good naturedly when asked about her experiences, had no insight, could be placed in a general hospital ward. Diagnosis, dementia praecox of paranoidal type. Prognosis bad. Physical examination was negative except that a skiagram of her teeth showed twelve teeth with root pathology or root abscesses. Pyorrhoea was present making it necessary to remove practically all her teeth which was done by Dr. Wonder. Shearer's method was used and the gums closed by horse hair suture. Within ten days after the completion of her surgical work, the patient was free from delusions and had complete insight into the morbid mental condition of the preceding six months. Two years later she remained well.

Miss E. K., age 20, was referred to me for committment to the state hospital in May, 1921. She was inaccessible, lay in bed in a stupor, required feeding and voided urine and feces in bed. She held a fixed posture, head somewhat bent forward, limbs with a markedly increased tonus resembling a catatonic rigidity, arms extended and hands presenting a tetanoid posture. A whispered yes or a slight response to a hand grip came after persistent stimulation. She was emaciated. There was a history of six months duration beginning with depression and anxiety, and gradually merging into a stupor. A diagnosis of catatonic dementia praecox had been made, though to my mind depressive stupor was the more likely diagnosis. She ran a temperature of 99°-101°, a pulse between 90 and 110, questionable thoracic and negative abdominal findings. X ray examination showed a small dense area in upper lobe of right lung suggesting tuberculosis, cloudy antra and two abscessed teeth. The antra were drained and the pathological teeth were removed with no apparent result, though with careful nursing, baths and massage she made some improvement. Another X ray showed an overlooked abscessed tooth which was carefully removed. Within a few days marked improvement was noted and the patient rapidly recovered her mental health. She afterwards described the change in her feeling immediately following the last dental operation as a loosening of a tension which had completely dominated her up to that time. This patient died a year later from pulmonary tuberculosis though remaining in good mental condition to the end.

Mrs. E. S., seen May 29, 1922, referred by Dr. Sheets of Cozad, Nebr., farmer's wife, age 32, married. For past four months has been suffering from extreme depression, complains of auditory and visual hallucinations of a terrifying nature, of robberies, explosions, of people talking about her misdeeds, of diamonds in the food. Refuses nourishment, is emaciated, very restless and noncooperative, saying "I must go, they are calling me." Sleeps little.

Examination showed extensive dental pathology, pus and many colon bacilli in urine, no thoracic or abdominal pathology. Complete removal of diseased teeth and bone was carried out, autogenous vaccines of colon bacilli given together with forced diet and moderate doses of luminal. She made steady improvement and by the middle of August was at home doing her own work. Has remained well since.

The brief histories quoted in this paper are presented to illustrate one angle only of the neuropsychiatric problem. One should take care not to deceive oneself by an exaggerated enthusiasm. A due sense of proportion is necessary when evaluating the factor of focal infection in respect to any given neuropsychiatric case.

THE DOCTOR'S RELATIVES.*

Lucien Stark, M. D., Hartington, Nebr.

The title, "The Doctor's Relatives", does not mean anything in particular except that he does have several relationships to things in general. He has his relationship to the cults, to the public, to his brother practitioners, to himself, to the law and to politics.

In taking up the doctor's relationship to cults, I want to say that in the main we are responsible for the birth, growth and development of most of the cults. We, ourselves, have too long neglected the minor things of medicine and have also failed to take into consideration the fact that people can be functionally ill with no organic basis to account for such illness. To digress a little, were I to start my education over again, I would attend the Palmer School of Chiropractic. I would do that, not to learn the practice of chiropractic, but I would like to know how they teach the system of salesmanship that enables them to put it over.

Now your cult is usually developed from some part of legitimate medicine and is put over by some individual who gives it a name. I can well remember the appearance of the first osteopath in the community in which we lived, and many of the people believed that he was the savior of the universe. Finally, I think, they have discovered that osteopathy consisted of the gentle art of pulling a man's leg by rubbing his back. Anyway Barnum was right. There is one born every minute and they all live.

What shall we do about it? Conduct a personal fight on any cult? No, I would not do that. If we are to handle the cults, I think that the law in Texas is a most satisfactory method of dealing with them. If a man must be a high school graduate before he can practice medicine, so should the osteopath. If he must be a graduate of a reputable college or university before he can practice medicine, so should the chiropractor. It makes no difference what school of healing they select, even if it is the unchristian, unscientific, christian science, they should be compelled to have the same education we have to have, and we should demand that they have the same amount of preliminary education that we have to have before we can treat anyone. If we can get their requirements high enough and maintain our own high standard, they will have no desire to follow the false gods of medical practice.

---

*Talk given before the Nebraska State Medical Association. Lincoln, May 17, 1923.

One thing we must do in order to purify our own body politic, and that is to standardize our system of teaching. There is too much bickering and dispute about various minor things. In a measure we are responsible for that. We have three schools of medicine. The American Medical Association abolished the lines of demarcation in 1900, but they are still operating. We have the homeopath, the eclectic and the regular schools of medicine. These things must be straightened out so that we may understand them. I have heard many regulars say, "No good can come out of Nazareth", and then proceed to roast the life out of the homeopath. When asked if he had ever read Hahnemann's Organnon, he said, "No". If you are going to talk intelligently or combat effectively, any of the 'isms or 'pathies, you must know the basis upon which they are built. You cannot find it out by simply standing up and saying they are no good.

As to the standardization of our systems of teaching, it does not make any difference what route you pursue in order to arrive at a certain point. If I want to go to Kansas City, I may take the Missouri Pacific or I may take the Burlington. What difference does it make so long as I get there?

The doctor has another relative—his relationship to the law. It may be divided into two classes: His relationship to the law as it exists, and as it is to be passed. I think that the average physician compares very favorably as a law abiding citizen with the individual in any other line of endeavor. I think that we all perhaps fracture the speed limit and maybe we do not conform to all the rules as regards fire prevention. The enactment of the Volstead law has undoubtedly done more to stimulate the study of chemistry than any other one thing that I know about, because the man who can produce a chemical and working formula for synthetic gin is, indeed, some individual.

The above are all laws that have to do with every citizen but how many of you men properly conform to the laws, rules and regulations put out by the State Board of Health? Having been a member and seeing other members here, I know that you do not do it unless you absolutely have to. For example, take our law relating to venereal disease. How many report all their cases? Some friend comes in with a venereal infection and you voluntarily say, "We won't say anything about this", which is a violation of the law. How many of you are called in to see an abortion which has been produced by some one? Maybe the lady dies. You report it as "septicemia". You do not give any information to the county attorney or assist in any way with the prosecution of the abortionist. On Monday, I saw a man join a subsidiary of this society who has been guilty of this sort of thing.

Regarding the laws to be passed concerning your activities, your relationship must be based upon what is necessary to be done for the community. Come down, if you please, some time when the legislature is in session and appear before the Legislative Committee and ask for a hearing for the science of rational medicine. I appreciate the fact that the doctor had a terrible time this winter when the chairman of the Committee on Medical Affairs was an avowed christian science practitioner. But come before any one of those committees and you will encounter the same thing. They look you in the eye and say, "You are jealous of those individuals. You are trying to create a doctor's trust".

This leads me to the relationship of the public to the doctor. It is one of those paradoxes I cannot explain. I have been in fairly active practice for twenty years and I do not believe that my experience differs greatly from the experience of the rest of you. So long as you do what the public wants you to do, you are all right; you are a fine fellow; but the minute that you don't, you become an insufferable bolshevist. They regard you as they do a sewer—sort of a necessary evil.

The best thing that you can do to impress upon your own mind your standing with the general public is to go home and get Kipling's little poem, "Tommy". You remember when the hotel man would not let him buy a drink, or he could not go to a show, he said:

"O it's Tommy this, an' Tommy that, an'
'Tommy, go away;'
But it's 'Thank you, Mister Atkins,' when
the band begins to play."

Your standing is precisely that very thing. So long as you are fighting for the welfare of the community and trying to protect it, you are all right. If you ask them to conform to certain regulations or assist you in seeing that they are carried out, you are regarded simply as an annoyance.

Personally, I get along with the public very well. I think at times my size has saved me. But you can get along with the public very well by insisting upon all of your rights, giving them credit of knowing nothing of scientific medicine and letting them know that you are their intellectual superior.

In connection with the public comes this question of publicity. The medical profession of Nebraska, of the United States and of the world must devise some scheme of publicity to put before the eyes of the general public a rational, scientific system of medicine, rather than this volume of misinformation which is peddled out to the daily press by the cult members and it must be in words of one syllable.

Why must you do it? You will face state medicine if you don't. You cannot go out and conduct an attack upon all of the cults and say you are absolutely right; but you can quietly, in a rational manner, sit down and spread this propaganda as widely as possible so that people will know what is true and what is untrue.

In order to get legislation, what must you do? You must commence with the individual and educate him so that he will demand of his legislators the sensible thing. You must commence with one individual and convince him. What are your legislatures made up of? I said the other evening that I intended to run for the legislature some time. I hope I am elected, because I want to introduce a bill to provide for the prohibition of all legislatures for a period of fifteen years.

Your average legislator is what? I want to divide them into two classes. First, some fellow who landed in a community years ago, prospered, and decided he wanted some excuse for living within the city limits, so he runs for the legislature, gets elected, and comes down to inflict all his own pet ideas upon everybody in the state. The other chap is the young man who graduates from law school and wants political preferment so he decides the best method of advertising is to run for the legislature. So you have two extremists; the old fellow that God couldn't tell anything, and the young fellow you could not tell anything unless you had some red fire and a brass band.

You must commence with the individual and begin where he can exercise some intelligence in picking out a member of the state legislature. I hope I may live long enough to see the time when the Nebraska State Medical Association, not as an association, but in accord with the resolution passed in the House of Delegates this morning, will have a publicity committee, with perhaps a full time man directing its affairs, so that the general public outside may know what is good and what is not, in modern, true and scientific medicine. They will never get it by reading the chiropractic advertisements.

The majority of us probably have a radio set. We sit around home and clamp the thing on. Up until the last sixty days, when the WAOW put in their outfit, the Palmer School of Chiropractic ran every outfit in the country off the map.

The other day I ran across a man who asked me about the Abrams affair. I had never seen a machine until day before yesterday. My good friend, Dr. Morris Nielsen,—and you honored yourselves when you elected him as president of this association,—and I went to call upon a physician with a very fine office. We complimented him on his office until I thought the man's face would suffuse with blushes. Finally he did the very thing we were in hopes he would do, by requesting us to look over his wonderful office. Over in a corner was a mahogany-looking affair. I said, "What's that?"

"You are going to laugh when I tell you. That's an oscilloclast".

"Is that so? What does it do?"

"That's the Abrams' machine".

"Let's see it work."

He pushed a button. Most of us have children who have studied piano. You remember those little dingbats to put on the piano so that the child would keep time? He started that contrivance going, and it clicked wonderfully, reminding me of one of those metronomes.

"What's that?"

"That's the oscillatory vibration".

"What do you do with it after you have it?"

"Come into this room and we will show you".

He had a beautiful place for the victim to lie down. He said, "Henry Ford's engineers have demonstrated no electric current ever went through it. I want to show you he is wrong". He put a "dingus" in a place and a bulb lit. I said, "What does it do from there?" My friend Morris, was asking questions, too.

He said, "You turn it to the seventh one" —I believe it was—" to treat cancer. The light gets a good deal brighter". He turned it, but I did not see the light getting any brighter. He said, "I got it in the wrong number." He shifted it somewhere else and I guess that it did what he wanted it to. The point is this, so-called intelligent people speak about the wonderful discoveries of Abrams. I personally know graduates of classical universities that believe in that sort of bunk. I think that the expression that I invented myself more nearly covers it than anything else. When I call it the "acme of asininity", I do not believe that it can be improved upon.

I again say, that I hope to live long enough to see a committee appointed that will handle the rational publicity affair so that such volumes of misinformation cannot be handed out to the general public.

The doctor's relationship to other practitioners is something we do not talk about. I do not know why it is. I presume that it is true with other professions as well as the medical. You hear something nice about another doctor, and you say, "I guess that's so. I think that he is a nice man. I don't know anything about him."

Did you ever think how easy it would be to say, "Sure! I know him, he does good work."

There has been a great deal of complaint —I do not know whether it is only true here or generally—concerning the offences of groups and clinics. I am not going to unduly criticize or make any effort to cut the throat of any clinic or group, but I want to say this: When you accuse the country doctor of providing material for the chiros, christian scientists or osteopaths, it is absolutely untrue. More of such things come from your group or clinic than from any other source. Why? I am not disparaging them as they do excellent work but the economic condition of the individual must be taken into consideration. But let us presume an individual has fifty dollars to spend on himself to find out what is the matter with him. The clinic or group says, "We will go over you but we must have seventy-five dollars for doing it." The clinic cannot do it for less than that and some out with a profit. So they are either going to inflict an economic hardship upon the individual or defraud themselves. He then goes to whatever cult or ism that holds out to him the greatest promise of help with the least expense to him.

I wish that all would try to practice altruism as far as possible. Don't chase the almighty dollar all the time, as they put no pockets in a shroud. Remember we are an idealistic profession and the greatest idealist who died on the Cross for the preservation of an ideal said, "What shall it profit a man if he gain the whole world and yet lose his own soul."

THE PREVENTION AND CURE OF PNEUMONIA.*

F. A. Wells, M. D., Axtell, Nebr.

For several years I have been engaged in research work on the treatment of pneumonia, and in this paper I present my findings up to the present time. Also during the past few months, I have been doing research work on the prevention of pneumonia as a complication of influenza and other diseases and as the two subjects are so closely allied, I present them together.

In the prevention of pneumonia, as a complication of influenza, I have found the routine administration of quinine to be a specific.

During the recent (1923) pandemic, I used quinine in every case and had no pneumonia complications while other physicians who did not use quinine reported several such complications. In this epidemic, practically all types of influenza were represented and in all types as soon as the diagnosis was made, quinine was administered.

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

In mild cases, with only a slight elevation of temperature, only an initial dose of four to six grains was given, followed by a similar daily bedtime dose during the continued elevation of temperature. In the more severe cases, the dosage was repeated every three or four hours. If the symptoms of cinchonism appeared, either the bromides were administered with the quinine, or the hydrobromide of quinine was used. In addition to the quinine, the following treatment was used:

In the respiratory type of influenza where the cough was irritating, a sedative cough mixture was given as indicated. In adults, if this was not sufficient, codeine in one-fourth grain doses was added.

If expectoration was viscid and scanty, ammonium chloride, or in small children, liquor ammonium acetatis was used.

To control pain and fever, acetylsalicylic acid or acetphenetidin in five to ten grain doses, each dose preceded fifteen minutes by strychnia grain one-fortieth, was administered as indicated.

In many cases I used strychnia or other tonics throughout the course of the disease and found the convalescence was much shortened thereby. In cases of the gastrointestinal type, bismuth and salol with castor oil as indicated were added to the quinine treatment. The patient was ordered to stay in bed until the temperature was normal, and in the house several days longer.

For the cure of pneumonia, many specifics have been used, most of them with such poor results that many physicians have adopted the expectant or symptomatic form of treatment. Of these specifics only glucose, serums and quinine have been of sufficient value to warrant their mention here.

Glucose, administered intravenously, seems to have produced good results in some cases. One army base hospital used it during the world war and claimed good results from its use. It has never been used extensively in private practice. Antipneumococcic and other serums received a thorough trial in the army hospitals during the world war and produced remarkable results in a few cases where the pneumonia was caused by a single type of the pneumococcus. Where the infection was a mixed type or other than the pneumococcus, serums were of little or no value. The serum treatment is only practical in hospital practice or where laboratory facilities are available.

The best of all the remedies so far tried is quinine. Its use in pneumonia, influenza and other bacterial diseases where the etiological bacteria are found in the blood, is as logical as its use in malaria, where it has long been known to be inimical to the malarial plasmodium.

Quinine is a bactericide of known power and without injury to the human organism; it may be administered in sufficient quantity to prevent the multiplication of the pneumococcus and other bacteria in the blood or where given in larger doses to destroy them. In other words, by the administration of quinine, the blood may be made an antiseptic solution of sufficient strength to prevent the growth of, or to destroy these bacteria.

In large doses, it is a powerful diaphoretic and under its stimulus the blood is thrown to the surface of the body, congestion of the internal organs is relieved and bacterial and tissue toxins rapidly eliminated through the open pores of the skin.

The dosage depends upon the susceptibility of the patient and upon the stage of congestion, an initial dose of six to fifteen grains is given, followed at three hour intervals by somewhat smaller doses until the disease is fully under control.

If the treatment is begun during a later stage, an initial dose of fifteen to twenty grains is required followed by a smaller dosage if indicated. A much higher dosage has been used, but is not necessary. The method of administration is governed by the urgency of the case and the condition of the patient. If the need is very urgent, the intravenous or subcutaneous methods are best, otherwise the oral method should be used. The rule to be observed is "give enough to obtain results".

A good rule to follow governing the proper salt of quinine to be used, is as follows: Orally any one may be used unless there is danger of cinchonism, when the hydrobromide is the salt of choice. Intravenously one of the freely soluble salts such as the dihydrochloride or the quinine and urea hydrochloride must be used. Various synthetic substitutes for quinine are being manufactured and are widely advertised as specifics for pneumonia but fall far short of producing the results of quinine itself.

In the army hospitals during the world war, the symptomatic treatment of pneumonia was used in most cases although the glucose and serum treatment were used to some extent.

If a personal reference will be pardoned, I will present my own experience with an attack of influenza and pneumonia which occurred during the first epidemic, Sept. 13-16, 1918, while I was stationed at the Base Hospital at Camp Logan, Texas.

I was among the first to be attacked and had both diseases coincidently. At the onset, a tremendous chill, fever that reached 104° F. within three hours, a leucocyte count of twenty-two thousand, and typical lung symptoms, left no doubt as to the presence of lobar pneumonia, while the terrible aching in head, back and legs, and the intestinal symptoms left no doubt as to the presence of an intestinal type of influenza.

With the permission of the Chief of the Medical Service, I began taking quinine as here outlined, with strychnia to keep up my strength and enough acetylsalicylic acid to control the pain. The fever only lasted twenty-four hours, I left the hospital the third day and the fourth day went back on duty.

When I was placed in charge of the pneumonia ward of the Base Hospital, Camp Dodge, Iowa, in March, 1919, the serum and symptomatic treatments were in use but after losing the first two cases, I changed to the quinine treatment and did not lose another case.

Since returning to civilian practice, I have continued the quinine treatment with such uniform success that I wish to call to the attention of my fellow practitioners, this treatment the value of which can not be too highly estimated. Several of my medical friends are reporting good results from the quinine treatment. Among internists of wide repute who use the treatment are Galbraith, S. S. Cohen, Petzold, Henry, Mouse and Caffrey.

Where the case is seen early, very little medicinal treatment other than quinine is required. However, conditions requiring additional medication may occur, especially if the case is not seen until in its later stages, and should be treated promptly. Expectorants are useful if rightly used but if wrongly used they do harm. As a general rule the very young and the very old require stimulating expectorants, while others more often require sedatives. This rule is modified by the stage of the disease and the condition of the patient.

The more valuable stimulating expectorants are the ammonium salts, especially the chloride and acetate. The best sedative is codeine, although the other opiates are useful. As a heart and systemic stimulant, strychnia is the most useful, but camphor, caffeine and alcoholic stimulants each have their advocates. For the fast weak heart, digitalis is invaluable.

Many internists do not consider external applications of any value whatever, but others still use hot or cold applications and cotton jackets. They should not be used if they make the patient feel uncomfortable. Good nursing and plenty of fresh air should always be provided.

The mortality of pneumonia has been greatly lowered by the quinine treatment. Under other forms of treatment it has been between twenty and twenty-five per cent but under the quinine treatment the mortality is less than ten per cent.

CONCLUSIONS

1. Quinine, if properly administered as a routine treatment for influenza, will prevent the complication of pneumonia.

2. If used in the congestive stage of pneumonia, it will in most cases check the disease at once.

3. If not given until later in the course of the disease, it will cure a larger percentage of patients than any other treatment known at the present time.

"If you make a dollar, save twenty-five cents; if one hundred dollars put away one-quarter thereof. Unless you begin the saving habit early in life, it will not come or cling to you later."

A RATIONAL TREATMENT OF PNEUMONIA.*

F. A. McGrew, M. D., Hastings, Nebr.

Pneumonia is the cause of more deaths in the United States than any other disease. Also, its mortality rate is the highest of all diseases of general character. The annual compilation made by the Bureau of Census shows the death rate for 1921 within the registration area from pneumonia (all forms) to have been 99.5 per 100,000, or a total of 88,224. Assuming that the deaths in the districts outside the registration area were at the same rate, the total deaths in 1921 from pneumonia were 107,328. The death rate from pneumonia was unusually low in that year. In 1920 the deaths were more than twice as many, the rate being 208 plus per 100,000, or approximately 223,500 deaths in total.

Moreover, what is even more pertinent to this discussion than this huge mortality, is the lamentable fact that the death rate is not decreasing, either through improved general hygienic conditions or better therapeutics. For example, in February, 1923, Mixsell and Giddings, of New York(1), report 3,080 cases of measles, 826 of whom developed pneumonia. Of this number, 424 terminated in death, a rate of 51.33 per cent.

Whatever cause there may be for pride in the achievements of medical science during the past twenty-five years, certainly none may be taken in the contemplation of such an appalling mortality, nor in the apparent helplessness of medical science in the face of it. Rather, does it not force the conclusion that a revision of clinical methods in respect to pneumonia may be advisable?

At present there are at least four methods proposed for the treatment of pneumonia which pursue a definite therapeutic principle. The order of their mention has no significance. First, there is the do nothing method, advocated on the ground that pneumonia is a self limited disease. Probably also the fact that treatment has not appeared to accomplish much good has encouraged this policy, in which only the secondary effects of the pneumonic process are treated.

Second, there is the method which centers the attack upon the pneumonia producing organism. Both direct and indirect attack have been proposed. In the Journal of the American Med. Assn., Jan. 13, 1923, an editorial writer reviews the work done on specific chemotherapy by Schlossberger and by Churchman in this country, and by Morganroth in Germany, and remarks regarding the quinine derivative, ethylhydrocuprein: "It has not solved the problem of human pneumonia, probably because in man the curative and toxic doses are too nearly the same." A safe bactericide, curative in pneumonia, has yet to be discovered. Indirect attack has been made principally through the inoculation of the patient with broth cultures of killed pneumococci and streptococci, with the idea of increasing the phagocytic power of the leucocytes.

Third, there is the method which centers the attack upon the toxins produced through the growth and multiplication of the pneumonia producing bacteria. Immunizing serums of univalent and polyvalent type have been produced and are offered for the treatment of pneumonia. Vaccines for the artificial stimulation of the production of immunizing agents are also on the market and presumably used to some extent. Conner(2) has recently reported the use of a serum-free solution of pneumococcus antibodies in a series of 116 cases of lobar pneumonia, the death rate being 14.6 per cent. The cases were unselected and of various types. He believes the method to represent a step forward.

Fourth, there is the method by which endeavor is made to obstruct the development of the pneumonia producing bacteria, restrict the area of their penetration, and minimize the pathological results. The body of the patient, meanwhile, is depended upon to develop its own bactericidal and immunizing defenses, and to bring about the final cure. This is the method which will be proposed in this paper as a rational method for the treatment of all pneumonias. Most infections are treated by it. It is nature's method of treating infections. It is often the only practicable method available. When properly applied it may be remarkably efficient, as witness the so-called outdoor treatment of tuberculosis. There, rest, nutrition, fresh air and sunlight are combined to promote the barrier against the penetration of the tubercle bacillus. A methodical application of these has been successful in reducing the mortality from tuberculosis fifty per cent within twenty years. The common use of hot wet dressings in the treatment of cellular inflammations has for its object the increase of the natural hyperaemia, and in consequence, of the leucocytic barrier. Bier's hyperaemia method is based on the same principle. Many other examples of this fourth method will occur to you. The method proposed for the treatment of pneumonia is, therefore, in good and honorable company, and has a creditable basis for its sanction.

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

May it not be that something has been lost as well as something gained while we as clinicians have eagerly awaited the heralding of each new specific or new antiserum? May it not have led to a degree of neglect or desultory use of familiar, proven measures? Or to an entire absence of any methodical, rational treatment whatsoever. May it not also be that the mass of undigested discoveries is largely responsible for the aimless and superficial treatment the pneumonias especially receive? Is there no way of lessening the frightful mortality from them until the research worker, at some indefinite future time, presents the clinician with a specific remedy which can be injected through a needle?

There are several reasons why a practicable specific treatment for the pneumonias may not be found. Unlike such infections as syphilis and diphtheria, in the pneumonias numerous organisms of many types and strains have been incriminated, or remain unidentified. Even the anatomical classification into lobar and lobular is no longer tenable. The identification of type, or strain, or specific organism by the character of the pathological train is wholly impossible. For practical purposes of treatment the pneumonias must be considered as one; but on this basis the hope of a remedial antiserum is slight. Also, a specific chemical bactericide is less likely than if a single organism were concerned in these infections.

The method of treating pneumonia about to be described was first put into practice October 25, 1918. Four patients had died of influenza-pneumonia within the week, two of them within the twenty-four hours just past. The orthodox expectant-symptomatic treatment had been in use. It was evidently a failure, in influenza-pneumonia at least. Influenza-pneumonia killed before there was time for the protective agencies to be rallied to the defense. Thereupon, a method was formulated which, with some minor improvements in detail, was used in every subsequent case of pneumonia coming under my care during the influenza epidemic of 1918-1919, numbering 65, and also in every pneumonia of whatsoever type or class which has occurred in my practice since the date mentioned. In this series of cases, approximately 100 in number, there has been but one death. This one death was of a patient who was taken out of my hands in the middle of her course while yet in good condition, my treatment being discontinued. It is scarcely to be charged against the method. Relapsed pneumonia occurred with delayed resolution in one case. Right femoral thrombosis occurred once; left femoral thrombosis once. Pleuritic effusions were diagnosed in a number of cases, but none was important enough to require evacuation. There were no empyemas. This low incidence of complications and low mortality rate form my excuse for bringing the method of treatment to the attention of the Association. As patient after patient has recovered under this treatment, there has come a feeling of confidence in its effectiveness. At least the results give warrant to its further trial.

METHOD OF TREATMENT

The method of treatment may be most conveniently considered under three heads; namely, general, medicinal and local.

GENERAL TREATMENT

The patient is put to bed immediately pneumonia is suspected, and kept there until all danger is past. Leaving the bed for evacuations or any other cause should be strictly forbidden.

The bed should be placed in a large, airy, sunny room, with cross windows constantly open for free passage of air. Screens should be placed to divert the air currents from the bed and diffuse them. Whether the room should be heated or cold probably is best determined by the usual habits of the patient. However, this point will be touched on later, as will also the one next mentioned.

The patient's clothing should provide for comfort, and be arranged to give easy access to every part of the chest.

Fever and delirium, when they rise above the control of the routine medication, are subdued by cold to the head, cold sponging of the face, neck, hands, and forearms. When needed, the feet and legs may also be sponged, and also the back, but this will be seldom. Sponging and cold to the head should be continued according to need. The ice cap is valuable. Ice bags may be manufactured in almost any home from discarded inner tubes in such number and size as may be required. If the feet are cold, woolen foot covering and artificial heat should be combined with cold to the head.

Pain from pleurisy is controlled exclusively by strapping the affected side, to limit its movement.

Sleeplessness is best relieved, when relief becomes urgent, by a small dose of Dover's powder, or, in small children, camphorated tincture of opium.

Nourishment should be continued at the capacity of the patient to take comfortably.

MEDICINAL TREATMENT

The method is based upon the idea that, for purposes of treatment, best results will be secured if there be no attempt to differentiate the various pneumonias under causal or anatomical types. Much lost motion is thereby avoided, and a routine treatment is possible, which may be applied immediately.

Three remedies are administered in every case, aconite, gelsemium and potassium acetate. 1-16 to 1-8 gr. aconite, 1-3 to 1-2 gr. gelsemium, and 2 to 5 grs. potas. acet., are directed to be taken in a glassful of water every hour, beginning immediately a threatening lung condition is discovered. There is no interruption of the hourly dose from sleep or any other cause during the early acute stage of the disease. For children the dose is cut according to age. A little orange or lemon juice helps disguise the taste, and sugar may be added, also, if desired.

The aconite slows and strengthens the heart beat, reduces the fever, improves ventricular action, and slows and deepens inspiratory efforts, benefitting pulmonary circulation.

The gelsemium is a sedative to the central nervous system, quieting the restlessness, improving the headache, lessening the delirium, and combatting the sleeplessness which is often a distressing feature. It subdues the cough by lessening the response of the nerve centers to the irritation. It lowers the temperature, promotes elimination through the skin, and in the doses given does not noticeably depress respiration. On the contrary, it favors lung expansion, for it lessens the reflex inhibition of respiratory efforts caused by the pleuro-pneumonic process.(3)

The potassium acetate increases the elimination of both water and solids by the kidneys, keeps the skin moist, and eliminates acids to some degree at least through the sweat(4). It markedly aids in reducing the fever. The potassium radical stimulates the heart, and combines with carbon dioxid to increase the blood carbonates. The urine becomes mildly alkaline. CO_2 acidosis is prevented. The blueness and rapid respiration due to increased carbon dioxid in the blood are seldom marked. There is little need of the oxygen tank. It is better to entirely dispense with it as its use would interrupt the methodical employment of measures which are likely to save the life of the patient, which oxygen seldom if ever does.

Water is taken to the amount of 7 to 8 ounces every hour, or 4 to 5 quarts within the 24 hours. It constitutes an important medicinal agent in pneumonia. It dilutes the whole circulating medium, sweeps through the lungs every 1 to 1.25 minutes, apparently picks up the toxic products and carries them out on the alkaline flood. It provides also for the large amount of water lost through the sweat. Patients who complain of the amount of water should have the heat and potassium acetate increased to secure more pronounced elimination. Necessarily children must have the amount of water graduated to their capacity.

There is little need of any medicines other than those mentioned, save in the exceptional case. If the pneumonia is prolonged, with a low or moderate reaction on the part of the defensive forces, it may be good therapeutics to stimulate a more active reaction by the cautious injection of vaccines or non-specific protein. Digitalis is indicated whenever the heart flags during the course of pneumonia. The heart should be examined every time the lungs are examined, watching especially for dilatation, weakness, or irregularity. If any of these are discovered, the aconite and gelsemium should be discontinued, and digitalis given in the indicated dose. Whisky or brandy is almost indispensable in tiding small children and old people over the exhaustion stage. A little camphorated tincture or Dover's powder may be used to give sleep when a soporific is required.

Although the three remedies particularly mentioned were chosen for the reasons given and the results have continued to justify their selection, they may not be much, if any, superior to others which act in a similar manner. They are in no sense considered to be specifics.

LOCAL TREATMENT

The local treatment consists of hot applications to the chest, made directly over the threatened or invaded lung area. Hot applications constitute the chief means in the method whereby endeaver is made to affect favorably the lung inflammation. Experience has shown that there is one way of using these hot applications which gives better results than any other which has been tried. Therefore, your patience is asked while the details are given.

EQUIPMENT NECESSARY

(a). Two thick, smoothly folded, all-woolen applicators. One and one-fourth yards of woolen flannel, folded three times one way and four times the other, makes the best applicator for the usual patient over 15 years of age. For children the size must be reduced, and for large chested or very fleshy individuals, increased appropriately. It is always preferable to have the applicators too large rather than too small. Folded as mentioned, there are twelve thicknesses of woolen cloth, between the folds of which the heat is retained. Cotton, linen, or canton flannel, or small, thin applicators do not hold the heat, and do not give good results. It is wise to go to the necessary trouble and expense to secure the right sort of applicator. Nothing should be left to chance or inexplicit directions.

(b). A steam heater for heating the applicators. A satisfactory one may be made of a bread steamer or large colander, either of which should have a tightly fitting lid. The steamer itself should fit tightly into the top of a vessel partly filled with water, which is to be maintained at boiling. The stove should be as near the sick room as can be made convenient, in order to save steps. The first applicator should not be put into the steamer until the water has been boiling vigorously for several minutes under the empty steamer. The applicator will then come from the steam heater moist but not wet, hot clear through, yet can be handled with the bare hands. If rolled up as it is taken from the steamer, it can be carried the necessary distance without much loss of heat. It will not wet the patient's clothing or the bedding. As the old applicator is removed the new is applied; after which the old is returned to the heater, and in turn becomes the new. Thus the two are heated and applied alternately as directed.

I have been asked many times if it would not do as well to apply a fomentation and subsequently keep it hot, eliminating need of changing, by means of a hot water bag or electric pad. Experience has shown that this does not bring about the same effect. I am not prepared to do more than suggest a reason for this, which will be done later in the discussion.

(c) Proper clothing properly arranged. The clothing must be arranged for quick, easy and complete exposure of any part of either side of the chest. This is a matter it is well enough to be insistent about. Most pneumonias occur during the cold months. The union suit is the usual bed garment of the unheated house for cold weather. It is absolutely taboo in treating pneumonia by this method. Nor is the long night gown much better. The two-piece undergarment, having the shirt opened coat-style down the entire front, and worn outside the drawers, can be used. But better still is a made jacket, the front and back pieces held together with tapes along the sides and on top of the shoulders. Each half should have a cotton cloth piece next the skin, an outside covering of woolen cloth, and if temperature conditions are severe, a layer of cotton quilted between. With this jacket, a pair of woolen drawers and woolen stockings are often advisable. Remember that the patient is to be kept comfortable. With clothing thus arranged and the other equipment running smoothly, one attendant can easily make the hot applications for hour after hour without great fatigue, and otherwise care for the patient. Also the physician can make the necessary examinations quickly over every part of the chest without needless disturbance or exposure of the patient. Since the applications are renewed every five minutes continuously for hours and days, and the physician should examine the heart and every part of both lungs at every visit, this arrangement of clothing is decidedly important.

TECHNIQUE OF THE HOT APPLICATIONS

As just stated, it has been the rule to make at each visit a physical examination of the entire chest. This is necessary to the method. The patient is disturbed as little as may be consistent with the obtaining of the information desired, is not raised to a sitting posture, and exerts little of his own strength in being rolled gently upon one and then the other side. Usually the change is grateful and restful to the patient. Though making a satisfactory examination from one to three times daily, no regrettable results have ever come from it in my practice.

Every change from normal is noted on a daily record sheet. One of the first considerations of the method is to recognize the earliest signs of the invasion of new territory, that hot applicators may be applied over it immediately. Slight changes in the vesicular murmur are important, particularly if the temperature chart and other symptomatic developments are significant. One of the earliest signs is a slight heightening of the percussion note. It frequently appears when the auscultatory signs might betray into a false sense of security. It is doubtless due to the early engorgement of the vessels of the new area, together with more or less obstruction of some of the bronchioles within the area by increased mucous from the newly inflamed surfaces. At this early stage the alveolar epithelium is swollen, the alveoli contain more or less serum, and often some blood. The daily examination records are necessary in order to follow the changes. One cannot be certain of yesterday's exact condition unless it has been set down in writing.

Having ascertained, for example, that a new area is being threatened or an older one extended, the extent of this is determined. The center of the attack is marked for the guidance of the attendant in making the hot applications. She is instructed as to the exact area to be covered, and, thereafter, renews the hot applicators at intervals of five minutes for as many hours as have been prescribed. The indicated hours depend upon the character of the pneumonia process as determined by the physical signs.

At the beginning of the attack it has been usual to order 8 hours of continuous application, followed by 2 hours of rest, then another 8 hours of applications, a rest of 2 hours, and so on. There is no let up except for the necessity of the patient for sleep until the temperature is normal and the danger is past. Eight, six, four or three hours on and two, three or four hours off, alternating regularly according to the prescription, has been the customary way of operating. The patient often drops to sleep between the re-applications.

A trained nurse is not necessary. Endurance, faithfulness, common sense and an interest in the recovery of the patient are the chief qualities needed in the attendant. Relief should be given her every eight to ten hours.

When the pneumonia involves an upper lobe, the pack should cover both front and back surfaces and extend across the shoulder.

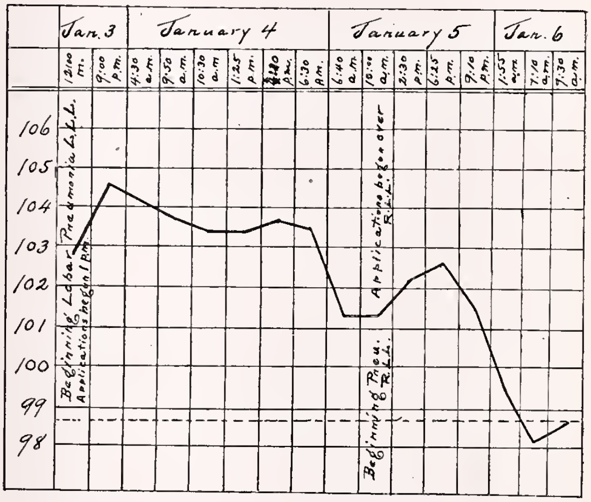
Generally speaking, the applications should be as hot as can or will be borne by the patient. If a white skin is found after three to eight hours of hot applications, the applications have not been hot enough. Every application should redden the skin under it decidedly. After a prescribed period of sufficiently hot applications there is a more or less permanent red discoloration, which may not disappear for several days. Blisters have not often occurred and are best avoided. Small children cannot stand as much heat on the skin as those who are older, and applications which burn the back of the attendant's hand uncomfortably should not be forced upon them.

How long should applications be continued upon the same surface? It depends upon the physical signs in the lung area covered. Frequently the signs in a certain lung area have so cleared under several hours of continuous applications that they have been changed to a newly involved area at the following visit. On the other hand, applications have been continued without change of location for day after day. The principle is the same as in any other battle—throw a defense in where the line is attacked. One of the pleasantest recollections is of the surprising transformations and retreats which have been witnessed as a result of only a few hours of this treatment. An ominous percussion note of relatively high resonance, with tubular breathing and a vanished vesicular murmur will, on the following day, in instances, have given way to a restored murmur and resonance, with perhaps a few rales remaining. It has been quite usual to pursue these guerrilla bands from point to point of attack, until finally the general army of defense was organized and the war was over.

Not less important is it to detect and combat any extension from an already settled pneumonic process. To limit the pneumonia to its original field is then the best that can be done and even that is only occasionally completely successful. More often partial success must be accepted, and the method credited only with a reduction in the extent and intensity of the inflammation. But I know of no other means of doing this which in any way compares in effectiveness with that comprised in the method which has been described.

GENERAL CONSIDERATIONS

The air of the sick room should, of course, correspond as closely as possible in its oxygen and carbon dioxid content to that of outside air. As to the temperature of the sick room, it may be that some regard should be had for the usual reaction of the patient to cold. In the treatment of the cases forming the basis of this paper, almost every condition of temperature and ventilation was experienced. Since all recovered, it would seem that a particular temperature and ventilation of the sick room is not a matter of great consequence. The series is too brief, however, to warrant any such conclusion. Patients were treated in the family living room, with a fire burning constantly in a stove, and the family using the room for living purposes. Other patients were treated in a remote upstairs room, with the temperature constantly below freezing, and raw cold circulating freely. If there was any difference, my impression is that the patients in the bitterly cold room got along better than the others. The one patient with relapsed pneumonia and delayed resolution was treated in a small, dark room, 7 feet square, with one small north window, the door opening out into a crowded living room. A large, cold, freely ventilated room furnishes air with normal oxygen and carbon dioxid content. The cold is stimulating to deeper respiration. Also, the impact of the cold air upon the warm skin of the chest during the change of applicators probably has a similar effect upon the nervous and respiratory systems as a splash of cold water upon the warm skin of the naked body. Every one who remembers the old swimming hole remembers how that is. There are thus two factors possibly concerned in whatever effects the interrupted local applications have upon the inflamed lung. The first factor is the prolonged, intense heat itself. The second is the brief dash of cold by which the heat is interrupted at frequent intervals. Anything approaching exact measurement of these effects is not possible at the present time. But assuming that the heat applied externally over the chest wall increases the blood flow to the lung area covered, that is, to the neighborhood of the area attacked, the hyperaemia should be able to build a stronger barrier against the penetration of the infecting organism, as well as increase the phagocytic army of defense. The alternating cold might aid in two ways. First, hyperaemia is more intense if heat is applied upon a cold surface; or, in other words, there is a natural hyperaemic reaction to cold. Then again, as has been said, the sudden cold upon the hot skin stimulates inspiratory effort. That there is an actual local effect upon the inflamed area produced by the applications would seem scarcely open to doubt when one has witnessed the ending of the pneumonic process, in full lobar involvement, by lysis, within three days. The subjoined temperature curve, taken from the record of a patient who afterwards had femoral thrombosis, is fairly typical.



Temperature curve, Mrs. C. W. L., aged 35. First seen Jan. 3, 1919. Pneumonia beginning L. L. L. Hot applications begun at 1 p. m. At 9 p. m. all signs showed complete involvement entire L. L. L. Hot packs continued until 4 a. m., Jan. 4, 15 hours continuously, then intermitted 2 hours; after which they were applied 6 hours on, 2 hours off, alternating, until Jan. 5. On that date beginning pneumonia discovered in R. L. L., and applications changed to new area. Temperature normal at 9:30 a. m. Jan. 6. Beginning Jan. 13, there was marked pleurisy on left side. Left side strapped tightly with adhesive strips, which gave great relief. Straps removed Jan. 22. Throughout entire course sputa colored red. General phlebitis veins of R. L. extremity began Jan. 15, and delayed recovery. It is interesting to observe that the curve continued to rise for about 8 hours after the applications were begun over the left sided pneumonia, and the same over the right. That much time was consumed in mobilizing the new forces and bringing them into effective action.

CORRELATED ITEMS

Several items, correlated to the chief measures, have been incidentally mentioned, but should perhaps receive more emphasis as distinguishing features of the method. In the first place, it is a treatment of the disease rather than of the patient. The whole objective of this treatment is to increase the defensive forces, hold back the infecting organism from new territory, and minimize the pathologic results of the invasion. The age, sex, and general physical condition of the patient are of quite secondary and minor importance. Regardless of these, the fight is to be made against a disease of high and rapid fatality. When escaping from a burning building, the danger of climbing down the ladder is usually disregarded.

In the second place, no classification of pneumonias is made or attempted as respects treatment. Every acute pneumonia, no matter how it may present anatomically, pathologically, or microbially, is treated by the same method. It is not at present expedient to attempt to found the treatment of pneumonia upon the identification of the particular infecting organism. This may seem a step backward, but I am obliged to defend this ground until the results of this method change for the worse or as good results can be demonstrated by some other.

In the third place, there is immediate institution of aggressive treatment. There is no waiting around to see what will happen. The partnership with Micawber is dissolved. "Waiting for something to turn up" in the pneumonias has proven the melancholy fact that in an average of approximately 40 per cent it is the toes of the patient which "turn up." That policy is at one hundred per cent discount. Lost time is lost opportunity. The first blow may be the decisive one. Everybody around the patient appreciates the do something policy. The method works best when mixed with a fighting spirit.

CONCLUSION

In conclusion may it be said that this brief series of cases of a disease having so many variables as characterize the pneumonias is an insufficient number upon which to base any positive declaration beyond the established facts. It would be presumptuous on my part to imply that the method used in the treatment of these cases is the only rational method which can be proposed. But in the absence of any such method and of any standard treatment whatsoever, the adoption of this one is at least a step in the right direction. Having and practicing a standard method which is reasonably successful, one may await calmly the final verdict of the experimenters as to new specifics.

REFERENCES

(1). Mixsell, H. R. and Giddings, E.: Report of 3080 Cases of Measles with Special Reference to Pneumonia, Southern Med. J. 16: 90 (Feb.) 1923.

(2). Conner, L. A.: Treatment of Lobar Pneumonia by Serum Free Solution of Pneumococcus Antibodies, Amer. J. Med. Sc. 164:832 (Dec.) 1922.

(3). MacLeod, J. J. R.: Phys. and Chem. in Mod. Med., 4th. Ed. p. 334.

(4). Pemberton, R. and Crouter, Carolyn Y.: Response to the Therapeutic Application of External Heat, J. A. M. A. 80:289 (Feb.) 1923.

DISCUSSION

A. B. SOMERS, M. D., Omaha: I have been exceedingly interested in this symposium on pneumonia. The reports throughout the country as a whole indicate that there has been no improvement in the treatment of pneumonia in the last fifty years; that the mortality is as great today as fifty years ago. You will find some exceptions. We have heard two today. One is quinine and the other is something else.

It so happens I have been treating pneumonia for a little over fifty years. I have been treating pneumonia to a greater extent than some of you think. For thirty years—from 1888 to 1919—I was surgeon for a smelting company that employed from 400 to 1200 men all the time. All those men passed through my hands. For ten years of that time, their families passed through my hands. You will understand in that class of people, engaged in that kind of work and exposed to heat and cold and everything else, there were a good many pneumonias in thirty years.

How did we treat pneumonia fifty years ago? We were about getting through bleeding for pneumonia. We did not do a great deal of it. We treated it by chlorid of ammonia and quinine, chiefly. There were three standard remedies. Other men mixed things as they wanted. We were just as successful then as now. I had thirty years ago what was called the quinine and chlorid treatment.

I think the important thing in the treatment of pneumonia is to alkalinize your patient as quickly as you can so that the urine is alkaline. I notice our friend from Hastings does that. He gives a sufficient amount of acetate potash to render the urine alkaline. In twenty-four hours they have a dram, which is a fair sized dose. I render the urine of my patients alkaline as quickly as possible, but in a different way. I give them thirty grains of bicarbonate of sodium and the juice of a lemon every three hours until the urine is alkaline.

The only thing I would criticize in his treatment is the everlasting tormenting of the patient by hot pads and examinations. Get your temperature and pulse and conditions and put them absolutely at rest, and don't examine the patients every time you see them. If you have indication of change, examine them; if not, don't examine them for a week. They are probably well by that time, anyway. I believe one of the fundamental things in the treatment is absolute rest, and the more good, quiet sleep they can get, the better off they are.

If there is indication for quinine, I frequently give it—three grains every three hours until their ears begin to ring; but give a sufficient amount of bicarbonate of soda and the juices of citrous fruits and absolute rest. Get free ventilation and a temperature in the fifties, and your patients will most of them get well. If you don't believe it, I would like to show you a record in which only occasionally a death occurred from pneumonia.

DR. W. A. CATE, M. D., Nelson: I was very much pleased with the paper read by our friend from Hastings. However, I think if he would give the aconite alone to relieve the congestion when it comes on during severe cold weather, it would be an improvement. That has been my experience. The pulse is small and wiry, hard to compress. The remedy which he gives in connection with the aconite is more indicated when the weather is warm and the pulse is soft, full and easily compressed. For the sharp cutting pains which come on later, bryonia is the remedy indicated.

J. C. MALSTER, M. D., Osceola: This pneumonia proposition is amusing to me. It reminds me of an article I read in a journal several years ago, where some fellow said, "I gave so-and-so for such a disease and never had a death." Another fellow said, "I give the same thing and they all die."

I have not practised as long as this brother—only twenty-seven years. If I would tell you the number of deaths I have had in pneumonia you might think I do not know what pneumonia is or do not have any practice. In twenty-seven years I have had two deaths from pneumonia. One had a heart lesion and influenza and kidney trouble. Another child had influenza and pneumonia and looked like he was getting well. All at once he became paralyzed and died. For fear I do not know enough to diagnose pneumonia, we will add a few for my ignorance and say six deaths in twenty-seven years.

I never use hot applications. I use a mixture for an application that contains some quinine, etc. I believe in pneumonia you must keep the patient pumping well through the lungs to help prevent congestion, for this reason I give tonic early. In this tonic have one grain of quinine. I believe in warm fresh air, but not cold fresh air. It is freezing the nurse to death and everybody else. In summer time you already have the warm fresh air. I have never used aconite for pneumonia.

I want them to eat to keep up their strength. Make them eat all they can take care of.

One time I had a child who said, "I wish that doctor wouldn't come. He stirs me around and makes me tired!" Don't make them uncomfortable every time you go in.

You can't treat pneumonia successfully over the telephone or with a scrap book. You must watch your symptoms and treat them accordingly.

H. J. LEHNHOFF, M. D., Lincoln: I am very glad to have papers of this sort getting to print, and particularly from this section. The men of the east —of New York and Pennsylvania—will not believe us when we talk to them of low mortality rates in regard to pneumonia. It is a truly remarkable record to have one hundred cases of pneumonia with practically no deaths. The one death Dr. McGrew had could hardly be laid at his door. It is surely worth going into print.

Several years ago in New York there was a symposium on pneumonia at the national Association, and the man who brought out the serum was one of the men who gave a talk. I had the opportunity of talking to him afterward. I could not believe him when he said in their particular locality before the time of the serum, the mortality rate averaged 40 per cent. At that symposium there were reports made from Harrisburg and Philadelphia of over 50 per cent mortality; in fact, one man from Harrisburg said that during a certain month—I believe March—there were more deaths reported than cases reported! When you speak to those men of the low mortality which we have out here, they do not believe it. Everybody will say, "I feel about your low mortality rate as I do about those from England. I pick up your hospital reports and they do not fit into what you say."

The hospital rates in Nebraska do not speak the truth in regard to the mortality rates. We have not formed the habit of sending our patients to the hospital until very sick, if medical cases; so the hospitals treat pneumonia cases which are brought there very, very low, and the mortality rates in our own hospitals for the past year are over 50 per cent. That is no criterion, I think, for the general mortality rate of pneumonia in the State of Nebraska. There are a lot of doctors I talk to who treat a great many cases of pneumonia each season with very few deaths.

I am glad these reports can be brought up and go into print, and the New York and Philadelphia men can see them.

ROBERT McCONAUGHY, M. D., York: The discussion in regard to pneumonia so far has been in regard to ordinary cases of pneumonia. I do not think anybody has mentioned the flu-pneumonia we have been having lately. Perhaps I did not hear. In 1918 and 1919 when we had the worst flu epidemic, I was sent to Wyoming by the Medical Director of the Burlington to help care for a lot of railroad men there. In addition to getting railroad cases, I got cases from two oil refineries. We had flu and flu-pneumonia, and not a good way of taking care of it, although four hospitals sprang up at once. Those cases came on and died promptly. Perhaps they did not get attention. There was a scarcity of physicians and nurses. They were crowded in box cars and tents. When I saw a case of flu-pneumonia I was scared.

I have not been practising as long as Dr. Somers—only forty-eight years—still, I have seen a little bit of pneumonia and had good success until I got out among the flu-pneumonias. I did not lose so very many cases, either, but still they died. The city used one of the churches for a morgue, and there were six or eight bodies there at one time. I want to tell you it is different from the kind of pneumonia we have been treating all these years.

F. A. WELLS, M. D., Axtell: In closing the discussion of my paper, I wish to say to Dr. McConaughy that my own case was flu-pneumonia. I know I had the two diseases coincidently because I had the benefit of laboratory help and of some of the best diagnosticians in the south. I know that mine was a double case and that I was cured by quinine. After having such a severe chill and a temperature of 104° F., within three hours after the onset of the disease, and only to have twenty-four to thirty hours duration of fever, I know there was something doing good work. Do you wonder I stand by quinine when it did so much for me?

Many of the pneumonias in the Base Hospital at Camp Dodge were flu-pneumonias. In the prevention of pneumonia as a complication of other diseases I will say that it seems to have been of equal value as a specific. In preventing pneumonia which develops as a complication of scarlet fever, measles, etc., I have had the same success with quinine as in the pneumonia following flu.

I agree thoroughly with Dr. McGrew that we are looking for a specific medicine that will destroy the pneumococcus, the streptococcus and the other causative bacteria of pneumonia on their own ground. I am trying to accomplish that thing. If I can do so, I believe I will save many lives, and that is what we are here in this world for—not for the money we can make, as we have been accused of, but to save lives and ameliorate the condition of our fellow men.

LOCAL ANESTHESIA.*

J. M. Willis, M. D., McCook, Nebr.

By the term local anesthesia in this paper it is intended to include regional and spinal anesthesia. Crile says "In surgical operations the brain may be insulated, and in consequence its driving power prevented by local anesthesia of the surgical field, or by blocking the spinal cord or the nerve trunks communicating with the field." He advocates the use of morphine to block the emotions and its consequences, chief of which is shock. Thus the patient is anociated against the drive of the surgeon's knife.

INDICATIONS.

Local anesthesia is especially indicated in the bad risks such as intestinal obstruction, because when patients are operated upon under general anesthesia their bronchial tubes may fill with regurgitated intestinal secretions resulting in death by drowning or later by septic bronchitis due to inhalation of septic material. In cases of acute sepsis, chronic disease of kidneys, lungs, heart and blood vessels, shock, hemorrhage, anemia, diabetes and obstructive jaundice, regional anesthesia is very valuable. Some cases go to the surgeon in a state of such lowered resistance that it is often a question whether or not it would be justifiable to incur the risks of general anesthesia. They are frequently autointoxicated to such an extent that the normal metabolism and oxygenation of the blood are greatly altered, thereby interfering with the essential requisite of any general anesthesia. In such cases, the advantages of regional anesthesia are obvious, since its main effects are limited to a relatively small region of the body, leaving intact the central nervous system, on the integrity of which depends the continuance of all vital functions.

There is a very wide range of difference in the individual types of temperaments of cases varying from the highly nervous and excitable individual in which it may be difficult to carry out the steps of even a simple local injection technic to the phlegmatic temperament who is satisfied with the promise that there will be no pain, but many others become restless and uneasy and find thirty minutes spent on the operating table a severe trial, although they actually experience no pain their consciousness that the operation is being performed is the principal drawback to the method. To such cases a slight touch is interpreted as pain. A few whiffs of ether is generally sufficient to calm them and allow the operation to proceed without disturbance. Another type of cases accept or even ask to be anesthetized locally but as soon as the operating room is reached faint or ask to be etherized. Therefore, it is advisable in nearly all cases to blunt consciousness of the patients and for this purpose morphine and scopolamine have proved most effective. After the administration by hypodermic injection the patient should be kept in a quiet darkened room for one hour then he should be taken to the operating room as quietly as possible and every unnecessary stimulation avoided. The purpose of this injection is to abolish fear, anxiety or uneasiness and establish a more pleasant, placid mental attitude and obedient behavior. After the operating room is reached the patient is placed on a well padded table and the assistance of a well trained nurse (vocal anesthetist as W. J. Mayo calls them) to engage the patient in quiet pleasant conversation and attract the patient's attention away from what is being done to him is of valuable assistance.

Novocain solutions are almost universally adopted for local and regional anesthesia varying in strength from .5% for infiltration and 2% for the skin wheals and nerve block and 1% for paravertebral, caudal, and anesthesia of head, hand, and foot. Novocain is more than ten times less toxic than cocaine. Adrenalin is added in the proportion of one minimum of the 1 to 1000 solution to the dram of novocain solution for the purpose of accelerating and prolonging the anesthetic action. The solution should be freshly prepared in normal salt solution, as large a quantity as one pint of .5% has been used. Needles should be long, thin and flexible; straight needles are satisfactory, provided the attachment is eccentric to allow injections to be made parallel to the skin. The syringe and needles devised by Dr. Labat I have found most satisfactory.

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

Gentleness is the prime requisite on the part of the anesthetist, the surgeon and all his assistants. Nothing will teach gentleness, respect for live tissues, dexterity, and a finesse in technic like experience in operating under local anesthesia. The anesthetist should handle his needle and his patient with equal dexterity. His knowledge of anatomy should be as perfect as possible as far as nerve distribution is concerned. The skin and periostium are very sensitive and the deep fascia, peritoneum and pleura moderately so.

The surgeon should wait ten minutes after injection of novocain to obtain full anesthetic effect. Sharp instruments should be used, cutting with scalpel is preferred to snipping with scissors. No tearing of tissue or rough handling or unnecessary pulling is tolerated. Retractors should be introduced lightly and opened gradually. Regional anesthesia possesses decided advantages over general narcosis. It is not dangerous to life. Intraspinal block seems to be fraught with some risk, owing to the rapid fall of blood pressure which it produces, but this risk has been considerably lessened by improved and simplified technique. Regional anesthesia realizes complete muscular relaxation thus affording greater facilities for use of retractors and accomplishment of delicate surgical procedures. It is in abdominal surgery that this is most apparent and best appreciated. The main effects of regional anesthesia are limited to a relatively small region of the body, leaving intact the central nervous system upon the function of which depends the continuance of all the vital functions of the economy. The interruption of the sensory nerve conductivity realized by the anesthetic drug protects the brain from the effects of local operative injury; the combined narcotics, administered one hour before the operation is commenced, reduce to a minimum the psychic stimulation of the brain cells. Operative shock is thus considerably lessened if not entirely eliminated. The general condition is very little affected by any of these procedures. Surgical convalescence is rendered much shorter than after the administration of general anesthesia. Regional anesthesia does not increase the resistance of the patient, but it reduces to a minimum the operative prognosis by not affecting the vital functions of the principal organs of the body. Regional anesthesia does not prevent pulmonary embolism but it lessens the opportunity for the other pulmonary complications since it does not interfere with the respiratory organs. Edema of the lungs, pulmonary congestion, or pneumonia will not develop as postoperative complications. There is no postoperative nausea and vomiting, no distention of the bowels with consequent paresis, no strain on the abdominal cavity and its contents immediately after operation. Normal diet, is as a rule not interrupted if the nature of the operation permits. Regional anesthesia is of greatest advantage and value to the country surgeon who is situated far from surgical centers and cannot secure the services of trained ether or gas anesthetists.

The young surgeon should perfect himself in the use of regional anesthesia, which increases in value with the increase of the skill with which it is administered. The well equipped surgeon must be prepared to use the proper anesthesia, or the proper combination of anesthesias in the individual case. It is not expected that the day will come when regional anesthesia will wholly displace general anesthesia; but undoubtedly it will reach and hold a very high position in surgical practice.

REFERENCES.

Crile, G. W.—The Kinetic Drive. W. B. Saunders Co.

Labat, G.—Regional Anesthesia. W. B. Saunders Co., 1922.

Labat, G.—Regional Anesthesia. Annals of Surgery, Feb. 1921.

DISCUSSION.

MAX EMMERT, M. D., Omaha: The subject of local anesthesia, so ably covered by Dr. Willis in his paper, is one of prime importance to all of us, as it opens up a big field for surgical procedure which has heretofore been confined to the use of general anesthesias.

In the first place, it is not the anesthetic of choice in every case. The prime factor with respect to local anesthesia is the patient's cooperation. If you can get that, 50 per cent of the battle is ended. Second is the reaction of the patient to the preliminary hypodermics. Morphine and scopolamin is the hypodermic of choice. Occasionally we find a patient who reacts oppositely to the expected reaction for this hypodermic. In my experience in one case, scopolamin acted as a stimulant instead of a sedative. These cases are rare. A preliminary hypodermic of scopolamin and morphine, with the former quieting the phsychical and the morphine dulling the pain centers, prepares the patient for local anesthesia.

The field to be covered is almost unlimited. This is the anesthetic of choice in the majority of chronic abdominal cases, and also of superficial cases such as tumors of the breast, hernias, varicocele, varicose veins, skin tumors, hemorrhoids and things of that kind. In abdominal work it acts admirably in the vast majority of cases. With the appendix, gallbladder, and a certain per cent of pelvic surgery, it is the anesthetic of choice.

The beauty about local anesthesia is that it can be easily supplemented by other anesthetics. For instance, an adherent appendix which is difficult to handle under local anesthesia, when it is reached, five or ten minutes of nitrous oxide, loosen the appendix, allow the patient to come out, and finish under local anesthesia.

By this supplemental method I have removed a large twisted ovarian cyst which filled two-thirds of the abdominal cavity. The patient had fifteen minutes of gas, and the rest was done under local anesthesia. After the operation the patient returned to bed in a conscious condition. In superficial operations, it leaves the patient in condition to ingest a full meal immediately. So that I think the local anesthesia is going to become the anesthetic of choice.

J. M. PATTON, M. D., Omaha. We are certainly indebted to Dr. Willis for the presentation of this subject. It is generally known that oculists were among the first to popularize local anesthesia and from them it has spread to all forms of operative surgery.

He mentioned the fact that general anesthetics are not all that could be desired, and while it may be hard for those of us who have been in practice for some years to change our technique, at the same time, we should be sufficiently liberal toward those who are working to put local anesthesia on an exact basis so that our followers may learn to push along these lines. The surgeons who accompanied Dr. Franklin H. Martin on his cruise to South America were surprised at the prevalence of local anesthesia as employed by South American surgeons. Many of the prominent surgeons of Buenos Aires and Montevideo use it more or less as routine and we saw some very extensive surgical procedures. One of the best hospitals in Rio de Janeiro is known as the local anesthesia hospital.

This form of anesthesia seemed to give splendid results. We have quite a group of men in the States who are doing excellent work with local anesthesia but the majority still cling to the older methods. I fell confident that we will advance rather rapidly along the lines of local anesthesia as it has some very decided advantages. As Dr. Emmert has said, local anesthesia relieves us from the dangers of general anesthesia and also frequently leaves our patients in much better general condition. Some advocates of local anesthesia apparently feel like the most of us do in driving our favorite car up a hill. If the power gets a little low as we approach the top we feel disgraced if we must go into second speed. In like manner some of our local anesthetists are chagrined if they have to supplement gas or ether. This is a mistake if by the use of local anesthesia we can reduce the general anesthetic time to a few minutes we have certainly served the interests of the patient. Let us be open minded on this subject and use the form or combination of anesthesia which will react to the best interests of the patient.

C. A. ROEDER, M. D., Omaha: Local anesthesia is too often "vocal anesthesia", the operator constantly endeavoring to convince the poor suffering patient that he is not hurting him. The main obstacle to the use of perfect local anesthesia is not its regional limitations, but the technic of its administration. The patient's cooperation is the sine qua non.

J. P. LORD, M. D., Omaha: I was not in when the paper was read, and really I should not enter this discussion. I feel, however, that a little testimony may be helpful to those who have not yet entered into the more general use of local anesthesia.

For about twenty-five years I have given a great deal of attention to it. Years ago when I was doing general surgery I ordinarily gave patients their choice in the matter of hernias; and in those cases of abdominal surgery where there was extreme danger to the patient, I always insisted upon local. I knew that the results were very much better. I have removed breasts under local and with entire satisfaction and without hurting—not like the old dental anesthesia traditionally painful. Too many locals are of that character. The results which I recite to you of my work are of analgesias without pain, more than the first needle prick. I regularly amputate legs and thighs and arms in subjects which are bad risks, under local. with perfect results.

Those of you who will take the pains to extend your operative work under local, following such authorities as our guest here today, or other good authorities and pursue this course persistently, you will find really a very limited use for ether.

When any considerable volume of surgery is done, there is mortality from anesthesia not so much directly, but indirectly, so that I am a firm advocate of the very extended use of local.

I am simply giving my testimony—there is nothing new to what I say but I wish to give strength to the arguments for the more general use of local. The finesse necessary is a matter of accomplishment and training, and you can only get it when you practice it.

There are few persons in my observation who give local properly. One-half of them will inject their local uphill, or against the nerve. Begin well above and work down, and in that way you get a spreading of your anesthetic which is most desirable. I mention this to illustrate that there are some who really do not use their heads at the same time that they are using their syringe.

A. E. HERTZLER, M. D., Kansas City, Mo.: The chairman certainly acted on a good hunch. It is nearly twelve o'clock and if he wanted to hear anything from me he would have to be in a hurry. I was never known to delay a meal or a ball game!

The discussion of the paper on local anesthesia seems to be a rather distressing job. I hate to agree with anybody and there is only one statement in the paper to which I would take violent exception and that is the term "caudal" anesthesia. I think it was perpetrated on the profession by Bransford Lewis. The human animal hasn't any tail. We inject it in the sacral cavity. Why under heavens drag in the tail, a thing which ain't?

The chairman very kindly refrained from reminding you I perpetrated on the profession the first book on local anesthesia in the English language, so I will confess it myself in order to account for my pronounced lack of opinion on a good many things. One gets to a stage after while where he is not very sure about anything.

Generally speaking, I would say for local anesthesia you can do anything with it if you are industrious enough. The great trouble with local anesthesia is it is hard work and takes more time for operating than under general, because under the latter you can turn it over for some young chap to finish up the job after you have mussed up the particular lesion. For this reason I find my enthusiasm for local anesthesia wane with the passing years.

However, there are several points to which I would like to call attention in an abstract way, though it does not apply to the paper just read, and the first is, one is apt to overlook the difference between compound and local anesthesia. There is a tendency for operators to soak their patients with morphine and think they are operating under local anesthesia. I recently saw one of my young colleagues working with a patient who was dead to the world. The prick of a large needle produced not the slightest response. That is not local anesthesia. If you are going to soak your patient dead with a narcotic, ether is by far safer. In place of local anesthesia this substitutes something wholly different. When doing local anesthesia in a proper manner, your patient feels as good as you do. If you are going to soak them down, you are losing a lot. It takes less skill, it is true, to do it this way and all that sort of thing, but it loses the advantages of all that belongs rightfully to the work of local anesthesia.

There is another unfortunate thing that mitigates against the skillful use of local anesthesia. Our medical students nowadays can tell you about the anatomy of the left leg of a grasshopper, but if you ask where the ilio-inguinal nerve is, they cannot make a sound! Our boys are escaping the essential thing an operator must know to operate under local anesthesia—anatomy. Some day, perhaps, medical education will come back to the doctors of medicine. Now we are certainly batting mighty low in the League of Medical Education.

CONSTIPATION IN CHILDREN: ETIOLOGY AND TREATMENT.*

E. S. Wegner, M. D., York, Nebr.

As a prelude to this paper we wish to give a partial history of one of our patients:

Norbert M., age 5 years, was brought to the office on July 11th, with constipation as his chief complaint. His mother said: "When I don't get his bowels to move he gets fever and has convulsions."

In answer to the question concerning duration of disease she said: "Always, when he was a little baby just a few days old the doctor had to give him castor oil to move his bowels, and we have had to give him something nearly every day of his life since," and then she added; "He gets worse all the time and I don't know what to give him any more; nothing seems to help. We've used castoria, syrup of figs, syrup of pepsin, liquid petroleum, castor oil, those square pink tablets, pills and everything else we could think of."

Under physical examination on this child's chart we have recorded "Under weight 9 lbs., otherwise negative."

Under treatment the chart shows 2 prescriptions, a diet list, and advice.

The prescriptions have never been refilled, and little Norbert now has a daily bowel movement without having had medicine of any kind in over two months.

We find on looking through our history records of the past 18 months that 8% of our patients have come to us with the same chief complaint and that with minor differences their histories read very much like the above history.

We find also that almost one-third of our patients complained of constipation when first seen.

Because of the prevalence of this condition we make no apology for introducing what on first thought may strike one as an old and worn out subject.

Our purpose is not to go into a detailed discussion concerning the many etiological factors in constipation, nor would we attempt to tell you how you should treat your patients when they come to you with this complaint. We hope by calling attention to one particular factor in the etiology of constipation to interest you sufficiently so that you will do your part to correct this factor, and we wish to suggest what for us has worked out as the most successful method of the treatment.

We believe that the chief factor in the

---

*Read before the Sixth Councilor District Medical Society, Wahoo, Oct. 1922.

etiology of constipation in its common and most prevalent form is medicine; or specifically that class of drugs known as laxatives, cathartics, and purgatives.

As doctors we have administered this class of drugs largely from habit, or in some cases simply because we thought of nothing special that was indicated and yet felt that since we were called we should give something. Perhaps we said to ourselves, "Well, if it does no good it certainly will do no harm." In the light of more recent knowledge, and our case histories, we can no longer say "it does no harm."

Mothers have seen doctors order cathartics or purgatives for sick children almost routinely so that they now give them without waiting for an order to do so, and we seldom see a sick child that has not been purged before we were called, regardless of its condition or the disease with which it is afflicted.

In this way untold harm sometimes results. Babies with pyloric stenosis and intussusception and older children with acute abdominal conditions get repeated doses of the calomel and castor oil or other drugs causing them to suffer unnecessarily and in many instances lessening their chances for recovery.

On some obstetrical services babies get what is called the initial dose of castor oil, routinely. This dose is administered regardless of the fact that we have definite scientific proof that meconium is a natural stimulator of peristalsis.

Often it is given before the milk flow has been established in the mother's breast and before the infant has had an opportunity to take food into the stomach. The possibility of a normal bowel movement under such conditions is done away with absolutely and in many instances this initial dose of castor oil becomes the first link in a chain of drugs that bind the patient to the cathartic habit for life.

Simply to prescribe a laxative or cathartic for the child that is brought to us with the complaint of constipation is an easy matter, but certainly is not the right thing to do.

The medicine may give the desired result for a time but later something stronger will be necessary. One 7 yr. old patient on our list had reached the place where he required 3 compound cathartic pills to move his bowels. Another patient 4 yrs. of age took two tablespoonfuls of castor oil without results. When the mother has learned this fact she is most willing to hear of some other way. To treat constipation in children successfully we must have the mother's cooperation. We explain to her that the task will not be easy, but that she may confidently expect results if she will follow the regimen we outline.

First we insist on the establishment of a regular habit. The child must have a bowel movement at a regular time every day. The preferable time is immediately after breakfast. To help get this result we give a laxative in the evening. This consists of a mixture of Aromatic F. E. Cascara Sagrada and Milk of Magnesia, proportioned according to the age of the child and the degree of constipation. We are careful to tell the mother the purpose for which this mixture is given and instruct her to decrease the dosage as rapidly as possible.

After breakfast the child is placed on the nursery chair. If, after 10 to 15 minutes waiting, there has been no bowel movement the child is taken up and a glycerine suppository is used or else a simple enema. The younger the child the easier it is to establish a habit. In the older children the mother must watch them closely and see that they have the bowel movement before they are permitted to go to school or to play. Too often a second etiological factor the habitual disregard or neglect to respond to the impulse to defecate gives us trouble. Some children are so interested in their play or work that they will not take time to respond to the impulse and thus go beyond the time when a normal movement is possible.

Other important things in the treatment of constipation are, regularity of meals, diet, plenty of drinking water and exercise.

For infants we advise from 5 to 8 or more ounces of water a day, for older children a glass or two taken warm before breakfast and frequent drinks during the day.

Kneeding the abdomen or massage is helpful in both infants and older children. Older children can also be taught to exercise their abdominal muscles with benefit.

The diet of infants should contain the proper amounts of sugar and fats.

Older children should have a general mixed diet with plenty of vegetables, stewed and raw fruits and little of pastry and sweets. We are especially insistent that they must not have sweets between meals.

HEMORRHAGE OF THE NEW BORN. *

Floyd Clarke, M. D., F. A. C. D., Omaha, Nebr.

In a recent comment on medical articles, the editor of a Holland medical journal makes the following statement:

"What a blessing it would be, if all the Journals of the world would agree not to publish any new facts for ten years, and devote their pages to collective reviews and monographs on the facts already known."

This attitude, if adopted, would, of course, inhibit medical thought, and yet most of us will concede that the majority of the newer facts brought out, are valueless from a practical standpoint.

For a long time our knowledge concerning hemorrhage of the new born has been more or less incomplete and confused, but more recently new facts have been established which have aided very materially in clarifying our knowledge.

Schloss and Commiskey have classified hemorrhage in the first few days of life as follows:

(1.) Traumatic: From obstetrical or surgical procedure.

(2.) Accidental: Illustrated by insecure tying of the cord.

(3.) Spontaneous: Without apparent cause, which may be subdivided into (a) Symptomatic; incidental to diseases as sepsis, congenital lues, or in offspring of families showing hemophila. (b) Idiopathic. Cases showing a prolonged blood coagulation and bleeding time, as we now know.

It is to F. C. Rodda, a pediatrician of Minneapolis that all credit is due for giving us valuable and practical facts concerning this last so-called idiopathic division.

FREQUENCY

No doubt most of us have the impression that hemorrhage of the new born is rather an infrequent condition. Yet Warwick in a series of autopsies on new born infants, found cerebral hemorrhage in 50% of one series, and 42% in another.

She found hemorrhagic diseases of the new born accompanying cerebral hemorrhage in 20% of her series.

In the Boston Lying-In hospital, cerebral hemorrhage occurred once in every 300 deliveries.

Holt states that hemorrhages are quite frequent during the first days of life.

Suffice it to say, that hemorrhage of the new born is more frequent than is generally supposed, and that it would seem justifiable to suspect a hemorrhage in every case of sudden death in an infant without assignable cause, or unless an autopsy had proven the contrary.

CAUSE

It is not possible to assign all cases of hemorrhage of the new born to any one etiologic factor.

Trauma due to a faulty application of forceps, or to some complication of a difficult labor, are well recognized causes.

Another factor is intra-uterine asphyxia, thereby raising the foetal blood pressure, finally resulting either in the rupture of a blood vessel, or a terminal capillary pouring out of blood.

There exists also a definite disease viz: Hemorrhagic disease of the new born. In this peculiar disease, limited to the first few days of infancy, there occurs a deficiency of prothrombin in the blood, and a prolonged coagulation and bleeding time.

The bleeding time is considered normal up to five minutes, and the coagulation time up to eight minutes.

According to Warwick, prolongation of bleeding and coagulation time usually occurs separately, rarely together. Prolongation of the bleeding time is the most common.

The mechanism of blood clotting is described by Feldman as follows:

The platelets which are derived from red bone marrow probably give rise on disintegration to prothrombin, which soon is converted into thrombin and then acts on fibrinogen to convert it into fibrin and cause clotting.

His explanation of the deficiency of prothrombin in hemorrhagic disease of the new born is based on a qualatative change in the platelets themselves, which does not allow of their disintegration and thus causes a lessened amount of prothrombin.

Infection of the blood stream by bacteria may cause hemorrhage in the new born. In modern times it is probably not common. Lues may be the cause in some cases. Probably the most common cause is due directly

---

*Read before Nebraska State Medical Association, Lincoln, May 15-17, 1923.

to some mechanical difficulty during the labor itself.

DIAGNOSIS

In the instance of cerebral hemorrhage, as a rule, diagnosis is not difficult.

These infants have a peculiar sharp cry, the fontanelle is frequently bulging, they are spastic, disinclined to nurse, and occasionally have convulsions.

In hemorrhagic disease of the new born, the blood is usually apparent, the baby exsanguinated and in shock.

It is the occasional case that presents difficulties. I believe that not a few of the sudden, unexplained deaths occurring in early infancy are caused by hemorrhage of the new born, and that if complete autopsies were performed on a greater number of these cases, this would be proven.

It is possible to conceive of a hemorrhage that would not be apparent, and the baby die suddenly because of this concealed hemorrhage.

At once there comes the thought that by performing proper blood coagulation and bleeding time tests, this suspected hemorrhage might be diagnosed. Rodda states that prolonged bleeding and coagulation time antedates the hemorrhage by several hours, or days.

PROPHYLAXIS

With these thoughts in mind, what can be done, looking toward the prevention of our cases of hemorrhage, due to birth trauma and those caused by hemorrhagic disease of the new born?

When there occurs a cerebral hemorrhage due to trauma at birth, is it not possible to call the surgeon earlier, before there has been material damage to the brain?

The mortality may be high from decompression operations in early infancy—but is it not better that a baby die, than be mentally inferior, or the victim of spastic paraplegia, better known as Little's disease?

Early lumbar puncture may so relieve the increased cerebral tension as to tide the baby over until one could be more certain as to the location of the cerebral trauma or hemorrhage.

I believe that our mortality from hemorrhagic disease of the new born would be less if every new born babe were given a routine test as to blood coagulation and bleeding time.

Warwick has instituted this procedure as a routine in the Miller hospital in St. Paul since May 1920. Up to April, 1921, two hundred and fifty infants had been tested as to their blood coagulation and bleeding time.

The mortality from hemorrhagic disease of the new born, before this routine test was started was 2.7%. Of the two hundred and fifty infants who were tested in the eleven months, only one died from the disease—a mortality of .4% showing a decrease in mortality of 2.3%.

TREATMENT

In treating these cases, one must bear in mind the fact that hemorrhagic disease of the new born may accompany a hemorrhage due to trauma, and that a blood coagulation and bleeding time test is helpful wherever symptoms point to hemorrhage.

As already stated, repeated lumbar punctures may be done to help in decreasing the intracranial tension. If the intracranial tension does not diminish with repeated lumbar punctures, the advisability of ventricular puncture should be considered.

Depending on the location of the hemorrhage and its extent, surgical procedure should be resorted to. It is questionable just what proportion of cases can be benefitted by early surgery.

In hemorrhagic disease of the new born, the injection of whole blood is curative. Thirty cc. of blood should be injected at one time and repeated as evidenced by coagulation and bleeding time tests, or by the appearance of blood. Rodda asserts that if the injection of blood from one donor is not curative, a second donor's blood should be used. It can be injected intramuscularly or if possible, intravenously. In a recent case Dr. Dow and I injected it intraperitoneally with complete success.

Personally I have discontinued the longitudinal sinus route as a site for the injection of any fluid. The results in my own hands have not been good.

For obtaining blood for diagnostic purposes, the sinus route is attended with little if any danger.

About a year ago Dr. G. F. Still of London made the statement to a number of us that he considered gelatin given by mouth as valuable in the treatment of hemorrhagic disease of the new born as the injection of blood. His opinion is of value. He uses it in teaspoonful doses of a solution of ten grains to the ounce.

Parke-Davis & Company has placed on the market a solution under the trade name of hemostatic serum. It contains prothrombin which is essential to proper blood coagulation. I have used it more or less empirically with apparent success. In hemorrhagic diseases of the new born, it should be used in doses of 5 cc.

SUMMARY

(1) Hemorrhage of the new born is more frequent than the early literature would lead us to believe.

(2) Blood coagulation and bleeding time tests should be done as a routine and thus possibly prevent some of the early deaths occurring in infancy.

(3) More autopsies should be done and thereby assist in proving these facts and bringing them to more general notice.

(4) Early surgical procedure and diagnosis may help in preventing these children from becoming hopelessly crippled and mentally deficient.

(5) The injection of whole blood is curative in hemorrhagic disease of the new born.

REFERENCES

Irving, Boston Medical & Surgical Journal, 184-539, 1921.

Rodda, J. A. M. A., 75-452, 1920.
Ill. Med. Journal, 39, 427, 1921.
Minnesota Medicine, 5, 713, 1920.

Munro & Eustis, Am. J. Dis Child., 24, 273, 1922.

Walthall J., Missouri M. A., 19, 100, 1922.

Towne & Faber, Cal. State Journ. Med., 20, 17, 1922.

Warwick, Amer. Journ. Dis. Child., 21, 488, 1922.
Minnesota Med., 5, 713, 1920.

Feldman, Ante-natal and Post-natal Child Physiology, 421.

Holt & Howland, Diseases of Infancy & Childhood, 93, 8th Edition, 1922.

Von Reuss, Diseases of the New Born, 207, 240.

REPORT OF A CASE OF MEGACOLON.

(With brief reference to the literature.)

H. M. McClanahan, M. D., F. A. C. P., Omaha, Nebr.

Since Hirschsprung's report in 1886 before the Berlin Congress of Diseases of Children, this condition has attracted wide attention. In making a careful review of the current literature I have found references to 479 articles. Two general classifications are made, namely, the congenital and acquired type.

A complete bibliography may be found by consulting the following articles:

(1.) Finney in 1908 after an extensive article on the surgical treatment of the disease appends a very complete bibliography including 206 articles, first appeared in 1825.

(2) Cadwallader after reporting a case, continued the bibliography down to 1916, with the additional number of 147 articles.

(3) Dowd, Fowler, Davidson and Mellon in their articles bring the bibliography down to 1921 with a total of 109 articles.

The writer found 15 articles for the year 1922. In many of the articles appearing in the medical journals and in reading abstracts from many of the foreign articles, the writer has ascertained that they nearly all deal with the pathology, etiology and surgical treatment of this condition. A study of many of the modern text books on medicine and pediatrics reveals the fact that scant attention to medical treatment is given. Indeed, in no text book that I have consulted is there any detailed line of treatment.

My personal experience with surgical treatment in three cases, has been unfortunate. All terminated fatally; two in infancy under one year of age, both dying within twenty-four hours from shock. The other case that I wish to mention briefly was a boy eleven years of age. He had been obstinately constipated from birth. He was thin and emaciated. The operation in his case was an entero-sigmoidostomy. He rallied very nicely. He lived four weeks. His chief symptom was constant vomiting, and he died simply from exhaustion. A post mortem was granted in this case. I should add he had a number of soft bowel movements after his operation. The union at the anastomosis was complete. The entire colon was involved, not only enlarged in its lumen but all the coats were greatly thickened. There were many fecaliths completely obstructing the lumen and greatly distending the already enlarged bowel.

In view of my personal experience, I decided, when the following case came under my observation, to carry out a definite line of medical treatment. This has been possible because of the faithful and intelligent cooperation of the patient's mother in carrying out to the minutest detail, the line of treatment. Indeed, I attribute the evident success to her hearty cooperation.

HISTORY

Orrie P. born Dec. 27, 1917. One child older in good health, parents well. No miscarriages. Normal pregnancy. Normal labor. Birth weight 9½ lbs. Infant cried prompty. No new born disease. Following history written by the mother: "Baby's bowels did not move. Had a convulsion when thirty-six hours old. Two more the following week. Vomiting was continuous for the first ten days. Given two injections of the pituitrin, one on the second day of life and one on the fifth day. These all but proved fatal. In neither case did the bowels move. The moment after he was given this, his spine throbbed so violently that the child did not lay still for ten minutes at a time. Third day his skin seemed dry and peeled off in patches. When six weeks old he was put on modified milk, fed regularly every three hours. Did not vomit after the sixth week. On the second day of life he received an injection, which was repeated each morning, in amount from one to two pints of water. This he always retained. I drew it away with a catheter. Usually, the water was quite yellowish in color; sometimes there were lumps. When ten months old he had a very severe sickness lasting four days. He lay in a stupor, he had fever, he vomited often, and his breath smelled sweet. He has had these attacks every three months. These spells continued for the next three years. He has had but one spell in the past year. Until about a year ago he never expelled the injections until I introduced the catheter. During the last year I gave him an injection, put him on his chair and he is able to expel it with some bowel movement. About every fourth day he has a large bowel movement, but there are no lumps."

The patient first came under my observation at my office Dec. 30, 1919. The previous day the mother had discovered a large mass in the abdomen. That was her reason for bringing the child.

EXAMINATION

Child was undressed, weighed 28 lbs., and then placed upon the table. The most striking appearance was the large barrel shaped abdomen. Skin was rather pale, dry, but no skin lesion. Bony system well developed. Joints pliable. Teeth, mouth and throat in healthy condition. Head of normal contour, circumference 19½ inch. Circumference of abdomen 24 in. Chest had a conical appearance. Apex beat one interspace higher than normal, due to the elevation of the diaphragm; heart and lungs otherwise normal. Patient's mental condition apparently normal. Abdomen widely distended in all directions, marked tympany. Coils of intestine distinctly outlined through the thin abdominal wall. In right lower quadrant there was a mass distinctly visible and palpable, slightly movable, had a doughy feel, irregular in contour, but not tender on pressure. From the history and examination I naturally surmised that this was a fecal mass, due to the congenital megacolon. I directed the mother to return home, inject 4 oz. of olive oil into the bowel, give one tablespoonful of castor oil by mouth, and after an interval of three hours to give a compound enema, one quart in volume; to repeat this treatment the following day, keep the child on a liquid diet and return to the office the third day for furthur examination. The Von Pirquet test made at the first visit was negative.

Urine: S. G. 1.020. Albumin negative. Sugar negative, Indican 4 plus (color test), Acetone positive, Diacetic Acid, positive.

At the second visit, the mother reported that the child had passed large quantities of fecal matter, that some of the masses were so dry that they would crumble on pressure. Examination of the abdomen revealed that the masses had entirely disappeared. There was no reduction in the size of the abdomen.

Patient was taken to Dr. Kennedy's office for an X ray examination. The attendant stated that she injected three quarts of buttermilk with barium and the child retained it all without discomfort.

Beginning the next day, Dr. Kennedy made a series of four plates over a period of two days. These plates show that the emptying time of the stomach was normal, that at the end of 24 hours the barium had all passed through the small intestine, and that apparently much of it was retained in all segments of the colon, but chiefly in the descending colon and sigmoid.

The child has now been under my care and treatment for two years and five months.

PRESENT CONDITION MAY 8, 1923

Weight 42 lbs. Height 3 ft. 10 in. Head circumference 21 in. Chest 22½ in. Abdomen 22 in.

Urine: S. G. 1.020. Albumin negative. Sugar negative. Indican a trace. Acetone negative. Microscopic negative.

Blood: H. G. 76%. R. B. C. 5,200,000. Whites 6,000. No differential count.

Child's mental development normal for his age, bright, active, and with a general appearance of well being.

X ray taken May 8th, under similar conditions indicates that the descending colon is slightly smaller than in the first plate, and that the child does not retain as large a quantity of fluid as at first examination.

TREATMENT

The line of treatment has scarcely varied during the entire period of observation. For one year, without a single intermission, he received a teaspoonful of a mixture of equal parts of Aromatic Cascara and Fld. Ext. Senna. For many years I have been satisfied that the fluid extracts are more valuable in constipation than their active principles. The last year and half the child has taken this combination every other night excepting on two intervals of three weeks each. The first time I omitted it and substituted the mineral oil; the next time the agar agar, but the results did not seem as satisfactory, that is, the enemas did not bring away as much fecal matter. Each evening, also, an enema of 2 oz. of olive oil was given. This was always retained. This part of the treatment has been continued without a single intermission. Each morning the child is given an s. s. enema varying in quantity from one pint to one quart. After fifteen minutes, this enema is syphoned off by means of a catheter, usually with a fair bowel movement. During the last year, after the enema the mother gives the abdomen a careful massage, then the child is placed upon the stool with feet elevated so that the thighs form an acute angle with the body. This enables the child to expel the contents from the bowel. For the last three months she has not had to use the catheter at all, and four times during that period he has had a bowel movement without the enema. As stated in the history, he had attacks of acute acidosis about every three months. The urine has been examined regularly once or twice a week, now for more than a year. When acetone is detected in the urine, the following treatment is promptly instituted. He is given a large compound enema. If he does not have a satisfactory stool, this is repeated in a few hours. All food is withdrawn and he is given orange juice and glucose in water by mouth, a glassful every four hours. He has had but one attack in the last fourteen months, and has been free from attacks now for eight months.

DIET

Under the mother's supervision he receives a well balanced diet. His meals are given him at regular hours, he is instructed to thoroughly masticate his food, he has been educated to eat all of the vegetables (both raw and cooked), he receives a pint and half of milk daily, either in the form of buttermilk or sweet milk to which is added the buttermilk tablets, he is given a liberal amount of cream on his cereal, and he is given fruits daily, with the exception of banana and seeded fruits.

GENERAL CARE

He is given a general bath three times a week, is required to take daily walks, and is encouraged to engage in play with other boys. Morning and evening he practices deep breathing exercises. Each evening he is placed upon a table with one end elevated, and with his legs extended over the upper end of the table, then in a systematic manner his legs are flexed on the thighs and thighs drawn up against the abdomen. Then by bending his legs under the end of the table his body is gradually elevated. These exercises repeated, with intervals of rest, for 20 minutes. These movements have been instituted chiefly to develop his abdominal muscles and exert pressure upon the viscera. In my judgment, this is a very valuable part of his treatment.

CONCLUSION.

From a careful reading of a number of articles on this subject and from personal experience, it will be found that these children show a poor bodily development, mental hebitude, and absence of subcutaneous fat. I believe this condition depends upon three principal causes:

1st. The pathology as recorded in many specimens and post mortem examinations; and that the pathology is progressive.

2nd. The general toxemia resulting from bad elimination, and the absorption of putrefaction products.

3rd. The interference with the normal respiratory and circulatory functions because of the upper extension of the diaphragm, lessening the vital capacity of the lungs and impairing the function of the heart.

The line of treatment instituted in this case has been directed toward overcoming these conditions.

The ultimate outcome cannot now be predicted. However, I shall continue the same general line of treatment, at least, as long as the patient continues to gain in weight and general well being.

It will be noted from the history that in the last twenty-nine months, he has gained in weight fourteen pounds, and that his abdomen is two inches less in circumference, and that he is mentally alert and bodily active.

REFERENCES

(1) J. M. T. Finney, Sur. Gen. & Obst., 1908, Vol. 6

(2) Cadwallader, Arch. Ped., 1916, Vol. 33.

(3) Dowd, Annals of Sur., 1921, Vol LXXIV.

(4) Fowler, Davidson & Mellon, Sur., Gyn. & Obst., Vol. 34, Page 610.

BEFORE AND AFTER VACCINATION

Few people today appreciate the suffering and terror that belonged to smallpox before the days of vaccination. In Boston, in 1721, with a population of 10,565, 5,989 persons were attacked with smallpox within a few months, and history is replete with similar examples. Macaulay stated that in the early part of the eighteenth century it was unusual to meet any one on the streets of London whose face was not scarred by the disease. Edward Jenner, the centenary of whose death is commemorated this year, performed the first vaccination with the virus of cowpox, May 14, 1796, and later proved that the boy was immune to smallpox. In spite of the most bitter opposition, this simple, safe, and certain remedy has won its way and is now practiced in every civilized country. But the disease is not eradicated and wherever vaccination is not rigidly enforced, serious epidemics are certain sooner or later to develop and to bring death and mutilation in their train. Probably no greater boon has been given to mankind by the medical profession and yet, because of its success, many fail to appreciate what has been gained and refuse to accept its benefits. The history of the disease and its conquest as told by Dr. V. C. Vaughan in the July issue of Hygeia should convince the most skeptical.

"Be content with less or little; obtain more gradually and safely. One cannot obtain the collossal fortunes of the Morgans, Goulds, Rockefellers and the like. These men are phenomona."

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor, Madison, Nebr.
R. B. Adams, M. D.,
Associate Editor, Lincoln, Nebr.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Nebr.
Tel. At. 6918.

Committee on Journal and Publication.
F. A. Long, Chairman ... Madison
W. O. Bridges ... Omaha
B. F. Bailey ... Lincoln
R. B. Adams, Ex officio ... Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. VIII September, 1923 No. 9

GIVING AWAY THE GRAND ISLAND SOLDIERS' HOME.

The recent legislature, well known as an economy legislature, very generously and rather freakishly, offered the state soldiers' home at Burkett on the outskirts of Grand Island as a gift to the Nation if it will provide for veterans of all wars therein. Recent press dispatches indicate that the matter is now before the United States veterans bureau for consideration, and the hope is expressed, presumably by parties to whom the wish is father, that the general government will take over the property for such purpose. Time will tell whether the tender of the gift will be accepted. It seems unlikely that the veterans' bureau will care to accept a gift under the conditions imposed. The veterans' bureau like all governmental agencies is somewhat discriminating.

The property of the Soldiers' Home consists of over a section of land and hospital and home buildings worth several hundred thousand dollars. Nebraska needs—and it is a crying need—two institutions, a Home for the Aged and Infirm and a Colony for Epileptics. If the general government takes over the Grand Island institution nothing more need be said. If, however, the offer is not accepted, let all physicians and welfare workers remember, that if the Soldiers' Home is not anymore needed as a soldiers' home, that the plant would readily lend itself to conversion, either to a colony for epileptics or a home for the aged and infirm. Future legislatures should be impressed with the doctrine that charity begins at home, and that true economy consists in providing for our own needs first.

THE OLD SWIMMING HOLE.

During the hot summer days in Nebraska we are constantly reminded of the "Old Swimming Hole." There was a time when we thought that the only harm that could come to us from swimming was the licking we got upon getting home after sneaking off to the old ice pond. We were always betrayed by the saw dust that got into our clothes, or perhaps some of us have had our clothing stolen while sneaking a swim in some forbidden place.

As physicians we are frequently asked as to the advisability of this or that child going swimming and it is our duty to consider the question seriously and give our best advice.

We have learned that acute infection of the para-nasal sinuses very often has its origin in the swimming pool. Sometimes these infections are severe and end in brain complications causing death. Unfortunately we can not lay the blame entirely upon the septic condition of the water in the pool because many serious cases have developed in pools which upon examination have been found to be free from sewage and very low in bacterial count. Plain water is very irritating to the nasal mucous membrane. This is especially true of the hard water of the middle west and the chlorinated city water.

When water gets into the nose osmosis occurs—causing oedema and acidosis of cells, ciliary activity is lost and eventually the cell dies. In deep diving there may be injury to the mucosal ostia of the sinuses from the sudden inrush of water and increased pressure.

If one has a chronic latent sinus or a so-called chronic cold and the irritative action of water upon the nasal mucosa causes an oedema with loss of ciliary activity and cell destruction or suppurative bacteria are washed into the sinuses from the nose by the sudden inrush of water an acute sinus infection is set up.

We should advise those suffering from chronic nasal or sinus disease whether active or latent to refrain from swimming with head under water and from deep diving.

—Claude T. Uren.

SPECIAL ARTICLE

THE DISTRIBUTION OF INSULIN.

The discovery by Banting and Best, working in Professor J. J. R. Macleod's laboratory, of the pancreatic hormone insulin, has wrought marveleous results in the treatment of diabetes. The discovery of insulin and its adaptation to practical medicine are, indeed, very notable achievements in themselves. Of great significance, if not greater significance, is the stimulating influence which the work of these two brilliant young men has already exerted and will continue to exert on the whole of medical research.

The work of Banting and Best forms a landmark in the history of biological science. It has brought a new lease of life and fresh enthusiasm. Fields that have been barely touched or in which inconclusive results have discouraged workers are being re-explored with all the zeal of the pioneer. It is not to be hastily forgotten that Banting and Best started Columbus-like in their determination to fertilize a field which had been tilled with but little harvest, at one time or another by eminent workers. Their discouraging or at best inconclusive results gleaned through the attempts of many years to discover an experimental relation between the pancreas and diabetes would have disheartened men of stuff less stern than that possessed by Banting and Best.

Looking back one finds it very surprising how the pancreatic hormone was so easily missed. In re-reading the literature in the light of the Banting and Best achievement, it is astonishing to find a long array of investigators—Starling, Murlin, Clark, Zuelser and Scott among them—who have been so near the solution of the diabetic problem and yet so far. It seems that in the maze of negative and inconclusive findings, they were hardly able, to use the language of Mathew Arnold, "to see it clearly and see it whole." Those who struck entirely negative results soon lost heart completely; those who had inconclusive or even encouraging results seem to have given up on the very eve of a great triumph. Much credit, therefore, must be given to the two energetic investigators who pushed beyond the pioneer borderland of scientific speculation or minor experimentation into the fruitful land of actual discovery.

This new scientific stimulation has already borne results. In Canada, in England, in Australia, in France and in our own country men are busily engaged in working out new methods or improving old ones for the large scale production of insulin, a product for which the demand is soon expected to exceed the supply. A good deal of the present activity is concentrated on carbohydrate metabolism. Macleod and his associates in Canada, and Winter and Smith in England are the chief workers along this line. The pancreas and carbohydrate metabolism are not the only foci of attention. Much important work is being done with tissues other than pancreas. Mann and his co-workers at the Mayo Clinic are continuing their basic work on the liver. Stuart and Rogoff are contributing much to the knowledge of the adrenals. Other organs and even plant tissue are now under investigation.

It is, therefore, not surprising to learn almost at the same time from many quarters that a hypoglycaemia-producing substance has been found in every plant and animal tissue thus far examined. It was to be expected from the very advent of insulin that the production of a substance capable of lowering the blood sugar was not the sole monopoly of the pancreas. Banting and Best, Collip, Woodyatt and others have prophesied the presence of insulin-like substances having the power to lower blood sugar like the pancreatic hormone, and capable of producing the typical convulsions. Shortly after Banting and Best's announcement and almost simultaneously Winter and Smith, Collip, Banting and Best, and Best and Scott converted the interesting supposition into a reality. Winter and Smith reported the use of an extract of yeast which showed very definite lowering of the blood sugar comparable to that found after injection of insulin. Best and Scott also found similar active material in yeast, in dahlia tubers, potatoes, rice, wheat, beet-roots and celery. Collip was able to prepare active extracts from yeast, onion, from lettuce and from whole wheat leaves.

More striking, indeed, are the findings by Best, Scott and Banting of insulin in the blood of the rabbit, dog, ox and human being. In the past many have been the attempts to demonstrate in normal blood the hormone despatched from the pancreas into the blood stream for the metabolism of the carbohydrates. Most results have been inconclusive. Clark, however, was successful in finding that the perfused pancreas consumed no sugar but that the quantity used by the heart was greatly increased as the result of passing the perfusion fluid first through the pancreas and then through the heart. These results furnished strong circumstantial evidence of the presence in the normal blood of a hormone necessary for the utilization by the tissue of carbohydrate. The yet unpublished findings of the Toronto workers complete the chain of evidence proving the existence of a hormone concerned with sugar metabolism.

Further work in which Best and Scott are now engaged shows that insulin or an insulin-like substance is found in other tissues subjected to examination. They have definite and conclusive proof of the presence in the liver, spleen, voluntary muscle and heart of a substance lowering blood sugar and inducing typical convulsions. They have also obtained positive results with urine, which suggests the possibility of the elimination of the hormone through renal channels. Banting and Best in one of their early papers had already discovered the presence of insulin in thymus and thyroid.

Best and Scott are at present engaged in comparing the insulin content of diabetic blood and solid tissues with those of normal animals. Their preliminary findings indicate the presence of insulin in the blood, liver, muscles and heart of dogs rendered diabetic by complete depancreatization. These findings argue for the presence of insulin even in the absence of the pancreas, and they well harmonize with the clinical knowledge that no matter how severe the condition of the diabetic patient, he is yet capable of utilizing some carbohydrate.

We have no knowledge as to the identity of insulin from various sources. All that is definitely known is the similarity of the physiological action of insulin from any source upon the power of lowering blood sugar, inducing typical convulsions, increasing the tolerance of depancreatized dogs and keeping them free from glycosuria. That there is more than one substance in the body capable of raising blood sugar is well known. Both thyroxin and adrenalin do so in spite of very marked dissimilarity in chemical composition. Reasoning a priori, we may argue for the existence of more than one purely chemical or biological substance inducing hypoglycaemia.

The widespread occurrence of insulin suggests the capability of synthesis on the part of the individual cell, which utilizes it in the disposal of carbohydrate for energy production. In this connection we may speak of two types of carbohydrate utilization—the exogenous and endogenous type. The former manifests itself in the consumption of carbohydrate for muscular work, and the latter for the maintenance of the individual cells or organs. We have a somewhat similar condition with reference to the systemic and the coronary circulations. The insulin used for work of exogenous origin is that produced by the pancreas and found in the blood stream. It is soluble, easily extracted and extracellular in its function. The insulin prepared by the other tissues is utilized for the maintenance of its own cells. It is perhaps insoluble, more difficult to remove, and endogenous in function.

The analogy to enzyme activity is very striking. Let us take lipase for example. There are two types present. One is prepared by the pancreas, is soluble, extra-cellular in function, aiding in digesting exogenous food fat. The other is found in all other tissue, is insoluble, intracellular, difficult to extract, and is concerned in internal metabolism. That a difference exists between these two types has been proven by the writer in 1921, who found that the exo-enzyme, pancreatic lipase is accelerated by bile salts, while the lipolytic endo-enzymes of all other tissue are inhibited by bile salts. The writer proposed the term alpha-lipase for the pancreatic enzyme and beta-lipase for the enzyme of all other tissues. The idea may be extended to insulin and it would be reasonable to designate pancreatic insulin as alpha-insulin and the insulin from all other tissues as beta-insulin.

The atrophy or degeneration of the islands of Langerhans throws the burden of supplying insulin upon the other organs. It is very probable that the liver acts as the first reserve depot. The repletion of this endo-insulin or beta-insulin of the liver renders impossible the maintenance of its endogenous cell activity. The result is degeneration brought about by inability to maintain its normal metabolism. The oxidation of sugar is inhibited. The state of internal sub-oxidation may be instrumental in bringing about a cell acidosis and in the conversion of carbohydrate and protein into fat, a process in which according to Smedley reduction is involved. That this may be true may be seen from the work of Best and Scott and other workers who have noted extensive fatty necrosis in the liver of depancreatized dogs. Other organs may suffer similar degeneration. That the liver is involved also is suggested from the work of Mann and Magath. They have shown that the liver is not necessary for the hypoglycaemic action of insulin but they have also proved that the presence of the liver is necessary for the permanent recovery of the blood sugar level after its administration. Winter and Smith have shown that liver contains an enzyme having the power of activating pancreatic extract to produce gamma-glucose, a type of sugar absent in diabetic blood.

The widespread occurrence of insulin may prove very fortunate. The ease with which it is to be obtained may result in its use in diseases other than diabetes. This disease is a disturbance of carbohydrate metabolism complicated by malnutrition which reveals itself in the acidosis, emaciation, loss of weight and greater susceptibility to infection. Insulin raises the carbohydrate tolerance. With the increase in the sugar utilized we may expect a corresponding increase in the ability to spare proteins and fats. The increase in the nutrition of the diabetic patient is at once marked by the alleviation of characteristic symptoms. The increased sugar consumption in the presence of insulin and the concomitant protein and fat sparing action make it a very valuable aid in combating malnutrition with marked loss of appetite and in fact all cachectic conditions. The use of insulin will no doubt prove a valuable aid where hypernutrition is essential in raising the dietary level of the patient as is the case in tuberculosis. The use of insulin in surgery has already been suggested by Banting.

It is a well recognized fact that hyperfunction of the organs of internal secretion may induce a hyperglycaemia or lowering of sugar tolerance. In the case of exophthalmic goiter we have excessive oxidation, rapid cardiac action and loss of weight. It would be interesting, indeed, to observe how far insulin can counteract the action of the thyroid hormone. In this connection it is interesting to note that Burn has overcome the hyperglycemia of pituitrin by the hypodermic injection of insulin.

The work of Banting and Best has opened many possibilities. We find ourselves, indeed, like Balboa, looking down from the mountain-top, beholding an infinite and beautiful expanse yet unfathomed. The vista continues to widen and new problems, new viewpoints, new theories loom large before us. To quote Joseph Priestley, "In completing one discovery we never fail to get an imperfect knowledge of others of which we could have no idea before, so that we cannot solve one doubt without creating new ones."

The writer is at present working in the Insulin Division of the Connaught Laboratories at the University of Toronto, of which Dr. J. G. Fitzgerald is the able director, and Dr. R. D. Defries, the associate director. Charles H. Best is head of the laboratory concerned in the manufacture of insulin and the research connected with it. This laboratory is not a commercial enterprise, for it dispenses insulin at cost. The reason for the successful outcome of the work at Toronto may be gleaned from the spirit prevading the laboratory, which runs both day and night, for routine and for research. Best has been very fortunate, indeed, in possessing the ability of gathering about him able and co-operative associates—Scott, Smith, Miss J. Ridout, Wall and Grant. A day spent at the laboratory would at once reveal the energy, the intensity, the enthusiasm and the devotion shown by all. After the experimental stage of insulin, it required a tremendous effort on the part of Banting and Best to overcome numerous minor and major difficulties in order to put the production of insulin on an available basis. That they have succeeded is too well-known. Banting and Best fully appreciate the fact that though the roots of science are bitter its fruit is sweet.

BIBLIOGRAPHY.

Burn, J. H. The Relation of Pituitary Extract to the Fall of Blood Sugar Produced by Insulin. Journal of Physiology 1923, 57, XXXVIII.

Collip, J. B. Glukonin. A New Hormone Present in Plant Tissue. Journal of Biological Chemistry 1923, 56, 513.

Levine, V. E. and McDonough, F. J. The Presence of two Different Types of Lipases in the Animal Organism Science 1921, 54, 177.

Mann, F. C. and Magath, T. B. The Effect of Insulin on the Blood Sugar Following Total and Partial Removal of the Liver.

Smedley, Ida. The Biochemical Synthesis of Fatty Acids from Carbohydrate. Journal of Physiology 1912, 13, 45, XXV.

Winter, L. B. and Smith, W. On the Lowering of

the Blood Sugar by an Extract of Yeast. Journal of Physiology 1923, 57, XL.

——On a Possible Mode of Causation of Diabetes Mellitus. British Medical Journal 1923, 612.

—Victor E. Levine.

PUBLICITY COMMITTEE CHAIRMANSHIP.

Dr. E. L. Bridges, declined the chairmanship of the Publicity Committee on account of other duties, but expressed a willingness to remain on the committee. I have, therefore, requested Dr. Clyde Roeder to take the chairmanship and he has accepted.

—B. F. Bailey, Pres.

POLEMICS AND EVOLUTION.

Utterly irreconcible are the views of those who believe in the inerrancy and literality of the Scriptures, as they interpret them, and those who believe the Bible is a collection of vague hypotheses and partisan legends containing no truth and whose authority cannot be sustained in the light of modern scientific knowledge.

To medical men the controversy over the doctrine of Evolution (the chief point of discussion) would be amusing if it were not so amazing. To declare the world was made in six days of twenty-four hours each is puerile. Only children and Fundamentalists can believe that. No one who reads this believes that his first parents were bipeds, one of whom was fashioned out of a piece of clay and the other out of a rib purloined from his sleeping mate. Such a belief is entirely incompatible with his knowledge of the fundamental medical sciences and their applied corollaries.

But such knowledge is nowise incompatible with the reasonable and sufficient belief in a Being designed, willed, and existing of Himself, or a Divine Creator. Any faith, be what it may, permits this assent. The reason for the furor of "Modernism" as linked up with Darwin and his theory of Evolution is not evident. Darwin felt "impelled to look to a First Cause having an intelligent mind in some degree analagous to that of man" and spoke of the evidences that convinced him of the existence of God.

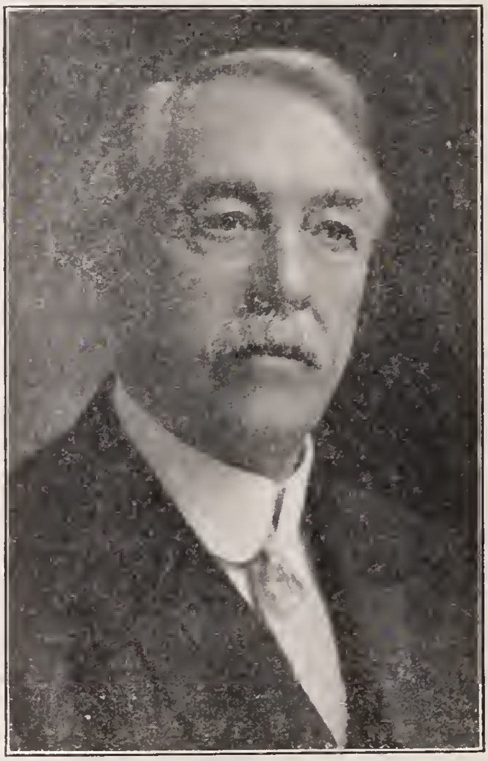
Saint Augustine who lived in the Fourth Century when insistence on religious dogma was much more strict than it is today, discussed the Evolution of man very learnedly and preached upon it. Can it be said that he attempted to "form a scientific soviet and to deny the masses the right to believe in God" as a verbally incontinent and well known Fundamentalist alleges is being done today?

The tendency toward materialism and the denial of the truths of revealed religion will not be overcome by insistence on beliefs not defensible by reason and the truth of which is controverted by modern scientific knowledge. Misguided churchmen who set themselves up as both advocate and judge in such matters do true religion much more harm than the man who declares his utter disbelief and who fortifies his position by adducing scientific fact which is inadequate as proof but undeniable as premise.

—* * *

THE DEAN OF THE OMAHA PROFESSION—WELLINGTON S. GIBBS, M. D.

Dr. Wellington S. Gibbs, whose half-tone is presented herewith, located in Omaha to practice medicine August 7th, 1879, and has been in practice continuously since that date, a period of forty-four years. He is the senior member of the profession in point of years of practice in Omaha.



Dr. Wellington S. Gibbs, Omaha.

Dr. Gibbs was born in Glenburn, Maine in 1845. He completed high school and for some time attended an academy, taught some and at 21 found himself superintendent of schools in a small town. Worked in Boston and in Burlington, Iowa, for a time. Attended the Medical Department of the Iowa State University and graduated in 1879. Came at once to Omaha and hung out his shingle and took in $16.00 in cash the first month, but business grew and at the end of the first year he felt himself doing very nicely. He was one of the organizers of the Omaha Medical College and was successively, demonstrator of anatomy, professor of physiology, and professor of medicine, which latter chair he held for 17 years. In all he was connected with the medical college 27 years. He has been connected with some educational institution nearly all his life. He helped organize the University of Omaha and has always been one of the directors. He is a presbyterian and has been a member of the session for many years.

PREPARING MANUSCRIPT.

Doctors generally, and particularly authors, preparing manuscripts for publication in this Journal should read the rules given in the Corona advertisement in this issue.

OMAHA MEETING, MISSOURI VALLEY MEDICAL SOCIETY

All the plans have been completed for the thirty-sixth annual meeting of this association which is to be held at Hotel Fontenelle, Omaha, Neb., September 18 to 21, in conjunction with the meeting of the **Interstate Society of Radiology** and **Physiotherapy.** This is a new organization, and its sessions will be held at the Fontenelle on Tuesday and Wednesday, while the Missouri Valley sessions will be held on Thursday and Friday. This plan will give the members of both associations a change to mingle, exchange their views, and to become acquainted. A joint "Get-together" dinner will be held on Wednesday evening, at which distinguished men will speak.

Dr. C. L. Mullins is the president of the Interstate Society, and Dr. Roland G. Breuer, of Lincoln, is the secretary

Hotel reservations should be made without delay.

An elaborate exhibit will be held on the mezzanine floor of the Fontenelle hotel which will be worth while.

Clinics will be held Tuesday and Thursday mornings.

The preliminary "Missouri Valley" program follows:

"Disease of the Blood Vascular System of the Extremities;" Dr. Barney Brooks, St. Louis, Mo.

"Lymphatic and Myelocytic Leukemia Favorably Influenced by Irradiation Therapy," Dr. H. H. Bowing, Mayo Clinic, Rochester, Minn.

"Sequelae of Epidemic Encephalitis," Dr. G. Wilse Robinson, president Missouri State Medical Association, Kansas City, Mo.

"The Treatment of Fractures," Dr. Edwin D. Ebright, president Kansas State Medical Society, Wichita, Kansas.

"Dilatation of the Cecum in its Relation to Appendicitis," Dr. J. M. Bell, St. Joseph, Mo.

"The Present Status of Blood Transfusion," Dr. H. K. Wallace, St. Joseph, Mo.

"The Roentgenology of the Osseous Spinal Column," Dr. Edward H. Skinner, Kansas City, Mo.

"Diagnosis of Pulmonary Tuberculosis," Dr. John Mills Mayhew, Lincoln, Nebr.

"A Consideration of the Immunity in the Life of a Syphilitic Individual," W. Turnér Wootton, president Arkansas State Medical Society, Hot Springs, Arkansas.

"The Use of Cistern Punctures in the Treatment of Diseases of the Nervous System." Dr. Lloyd J. Thompson, St. Joseph, Mo.

"Syphilis of the Lung," Dr. Horace W. Carle, St. Joseph, Mo.

"Fractures of the Skull," Dr. Francis R. Holbrook, Des Moines, Iowa.

"A Review of 50 cases of Cancer and 25 cases of Precancer of the Breast," Dr. Caryl Potter, St. Joseph, Mo.

"The Value of the Cardiograph in Insurance Examination," (illustrated) Dr. Arthur L. Smith, Lincoln, Nebr.

"Classification of Heart Failure," Dr. P. T. Bohan, Kansas City, Mo.

"Trichiniosis," Dr. Granville N. Ryan, Des Moines, Iowa.

"Medical Treatment of Tic Douloureaux," (illustrated) Dr. S. Grover Burnett, Kansas City, Mo.

"How Many Hemorrhoids?" Dr. Daniel Morton, St. Joseph, Mo.

"Pulmonary Changes in Cardiac Disease," Dr. David S. Dann, Kansas City, Mo.

"Electro-coagulation," (illustrated) Dr. T. Howard Plank, Chicago, Ill.

"Increased Urinary Frequency, its Caues, Diagnosis and Treatment," Dr. T. M. Paul, St. Joseph, Mo.

TRI-STATE DISTRICT MEDICAL SOCIETY DES MOINES, OCT. 29-NOV. 1.

The annual assembly of the above organization will be held in Des Moines, October 29, 30, 31 and Nov. 1st.

The entire time of the meeting will be taken up with scientific addresses, essays, symposiums and diagnostic clinics.

Headquarters will be at the Fort Des Moines Hotel and the scientific sessions will be in the new Woman's Club building.

Thirty-five of the leading medical men of the country are to be on the program.

The Nebraska physicians are most cordially invited to attend and participate in the program.

CLINICAL CONGRESS

The Clinical Congress of the American College of Surgeons will be held in Chicago, October 22 to 26, 1923. Headquarters at the Congress Hotel.

FOR SALE: An almost new Spencer Microscope, three nose-piece, oil immersion, in case (cost when new $135.00) and a McCaskey Register System for doctors, $100.00. Property of the late Dr. E. S. Thompson. Mrs. Lillian Thompson, Wisner, Nebr.

NOTES ABOUT THE DOCTOR

Dr. C. C. Tellesen, Wynot, is reported ill.

Dr. F. J. Kalal has moved from St. Paul, Nebr., to Haigler.

Dr. J. C. Waddell, Beatrice, spent his vacation in Colorado.

Dr. and Mrs. W. F. Callfas, Omaha, spent 10 days at Minnesota lakes.

Dr. Claude Wills, lately of Casper, Wyoming, has located at Madison.

Dr. and Mrs. Leroy Crummer, Omaha, sailed from New York for Naples in August.

Dr. Earl Lunson, Gardner, Mass., visited relatives and friends in Lincoln, the latter part of July.

Dr. W. J. McCrann, Omaha, who was ill for six weeks during the summer has resumed his practice.

Dr. W. O. Bridges spent a part of the summer vacation on Lake Superior with some Omaha friends.

Dr. and Mrs. Curtis Galt who have resided in Porto Rico the past year have returned to Nebraska.

Dr. and Mrs. E. T. Manning, Omaha, had as a vacation a trip to the Canadian border during August.

Dr. E. B. McGuire, for fifteen years a practicing physician at Mead will engage in practice in Fremont.

Dr. B. F. Bailey and wife, Lincoln, are at present enjoying their cabin home at Carmel-By-The-Sea, Calif.

Dr. Nora M. Fairchild and her mother, Omaha, took a vacation trip to the Pacific northwest in August.

Dr. R. L. Hart, Kearney, suffered minor injuries and the loss of his car in an auto accident the first of August.

Dr. J. J. Rizk, Lincoln, after an absence of two years during which time he visited his native Syria, has returned.

Dr. Warren Thompson, Omaha and his brother Dr. Chester Thompson, enjoyed a fishing trip at Wright's ranch, Colorado.

Dr. and Mrs. W. F. Eccles, York, and Dr. and Mrs, Frank G. Snyder, York, spent a month's vacation in Estes Park, Colo.

Dr. W. L. Albin, Lincoln, with his wife and daughter, has gone to Vienna for a year's post graduate eye and ear work.

Dr. and Mrs. A. H. Webb, Lincoln, have returned from a six weeks trip to the Pacific Coast and through the Canadian Rockies.

Dr. W. C. Bartlett, Alma, suffered from an infection of the foot lately and was confined to the house for some time as a consequence.

Dr. and Mrs. C. P. Fordyce, Falls City, motored to New York where the doctor took a course at the Columbia University medical school.

Dr. A. U. Sinamark, Fremont, has been appointed to a position in the Veteran's Bureau and will have headquarters and residence in Omaha.

Dr. George P. Shidler, York, has been appointed physician at the women's reformatory at York, succeeding Dr. L. B. Rose, Utica, who resigned

Dr. and Mrs. W. H. Mick and family, Omaha, went on an extended trip to Pacific coast points, including Vancouver, Los Angeles and points between.

Dr. I. H. Dillon, until recently head of the bureau of health of Nebraska, has located at Waterloo, Iowa, and will devote himself to eye, ear, nose and throat work.

Dr. and Mrs. C. H. Breuer, Lincoln, have returned from a seven weeks' trip to Pacific coast points. The doctor also attended the meeting of the A. M. A. at San Francisco.

Dr. and Mrs. M. G. Wohl, Omaha, have returned from a six weeks' stay in California. They attended the A. M. A. convention where Dr. Wohl presented a paper on Fungus Disease in Nebraska.

Dr. S. J. Stewart, superintendent of the Institution for the Feeble Minded at Beatrice, has resigned. The salary paid heads of Nebraska institutions is not tempting to the average man.

Dr. Victor E. Levine, for several years connected with Creighton University College of Medicine has spent the summer working in the Insulin Division, University of Toronto School of Medicine.

Dr. A. D. Dunn, Omaha, on returning from the A. M. A. convention, was met by his family at Cheyenne from which point they motored to the Medicine Bow country where they spent several weeks.

Dr. and Mrs. E. C. Foote and family, Hastings, have been on a vacation to White Earth Indian reservation, Minn. While there one of the children became very ill necessitating an early return home.

Dr. J. A. Brown, Afton, Iowa, the first physician to practice medicine in Box Butte county, in the latter eighties and early ninties, visited in and about Alliance during July. Dr. Brown is past 80 years of age.

Dr. W. B. Bannister has located in Holdrege to practice the eye, ear, nose and throat specialty. He is a brother of our Dr. J. M. Bannister well known eye, ear, nose and throat specialist of Omaha and has but recently retired from the regular army after a service of thirty-six years.

HYMENEAL.

Dr. A. W. Mulligan, Grand Rapids, Mich., and Miss Eloise Carr, Beatrice were married, July 30. Dr. Mulligan formerly lived at Beatrice and Omaha.

Dr. Fredrick D. Coleman, Ulyses, and Miss Lucia Wills, Lincoln, were married, August 29.

NECROLOGICAL

Dr. Fred A. Nelson, Omaha, Creighton Medical College, 1904, physician and pharmacist, died a victim of a chemical explosion, July 23, aged 54.

"When the late Anthony Drexel was asked what to buy speculatively, he replied: 'Rather play poker'."

"The nursing shortage of the past few years has been due, not so much to the failure of the training schools, as to the greater appreciation of the value of trained nurses. Their services are in wider demand."

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, October, 1923. No. 10

CONTENTS

Page

Tumors of the Breast, Byron B. Davis, M. D., F. A. C. S., Omaha, Nebr. 341

The Diagnosis of Obscure Tuberculosis, Miles J. Breuer, M. A. M. D., F. A. C. P., Lincoln, Nebr. 347

The Goiter Problem, J. C. Waddell, M. D., Beatrice, Nebr. 351

The Goitre Problem, W. A. Rush, M. D., Beatrice, Nebr. 354

The Patient with a Psychosis: Etiology, Treatment, and Conclusions, R. H. Spradling, M. D., Head Physician and Assistant Superintendent, Lincoln State Hospital, Lincoln, Nebr. 358

Intussusception in Children, Howard B. Hamilton, M. D., Omaha, Nebr. 362

Transfusion of Blood for Hemorrhage and Shock, George L. Pinney, B. S., M. D., Hastings, Nebr. 365

Chronic Empyema with Broncho-Pleural Fistula, C. H. Waters, M. D., F. A. C. S., Omaha, Nebr. 369

Page

Some Undesirable Effects of Deep X Ray Therapy, Carl Kail, M. D., Lincoln, Nebr. 372

EDITORIALS—

- The Wiles of the Abortionist 374
- Annual Meeting Attendance 375
- Meeting Interstate Society of Radiology and Physiotherapy and Missouri Valley Medical Society 374
- Malignancy of the Testicle—A Cancer of Youth 375
- Reorganizing the Profession 376
- A Brief History of Medical Organization in Omaha 377

Medical Women's National Association 378

Notice of Examination for Entrance Into the Regular Corps of the United States Public Health Service 379

Tri-State District Medical Association 379

The Societies 380

For Sale 380

Notes About the Doctor 380

TUMORS OF THE BREAST.*

Byron B. Davis, M. D., F. A. C. S., Omaha, Nebr.

The pathology of benign tumors of the breast is in a state of chaos. It is generally agreed that fibro-adenomata exist and that chronic mastitis is an entity and there are many elaborate classifications of these benign conditions. But when the question arises of the relation, if any, of these benign lesions to malignancy trouble begins. Does cancer ever arise in fibro-adenomata or in chronic cystic mastitis? Is chronic cystic mastitis a pathological condition or merely a normal involution? Judging from numerous articles which have appeared during the past eighteen months these questions are further from a settlement than they were ten years ago. Lesions that Bloodgood regards as harmless Ewing and Cheatle look upon as ominous.

Pathologists and surgeons are yet very much in the dark in their efforts to ascertain what constitutes a pre-cancerous condition. In the present state of knowledge only such conditions can be considered pre-cancerous which observation has shown usually to precede the advent of recognized malignancy. Intractable fissures of the lip, persistent irritation of lacerated cervices, chronic ulceration of the scrotal skin of chimney sweeps have long been regarded as prodromal signs of cancer. That cancer does not always follow upon these lesions is not an argument against it, for it is reasonable to suppose that if the irritation continues long enough, the results would be positive. The cells of some individuals are doubtless more tolerant than others to prolonged irritation.

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

Does the mammary gland harbor any lesions that can be considered analogous to fissure of the lip, chronically irritated cervices or the ulcerated scrotum of the chimney sweep? It is a complex gland and quickly responds to irritations. Undue pressure by a corset for a few hours is often followed by tenderness which persists for days. The presence of a fibro-adenoma causing occlusion of many small ducts by pressure upon them, the consequent excitation of the epithelial cells in the ducts and acini can scarcely fail to act as a very definite irritant. The irritation will persist as long as the tumor is present.

The same may be said of chronic mastitis whatever the type. Occlusion of the ducts occurs, cysts form and essentially the same conditions exist as in the case of the fibro-adenoma. The cells are no longer normal epithelial cells. Their physiological function is destroyed. They become more embryonic in type. When this condition is reached it is only a short step to true malignancy. No one has ever seen into the birth chamber of a cancer cell, and who can tell just when a cell ceases to be innocent and takes on the attributes of malignancy? As soon as these cells are seen to have broken through the basement membrane the pathologist calls it cancer. No one has explained why the cells break through this barrier. Is it because it has taken on the characteristics of malignancy while in its normal environment, or is its passage through the basement membrane accidental and does this change in habitat transform an innocent cell into a malignant one? There are many questions along this line that have not yet been answered and when explained may help to clear away the fog.

Many surgeons and pathologists are convinced that the fibro-adenomata and chronic cystic mastitides are to be regarded as precancerous lesions. In the case of fibro-adenomata there is almost a universal concurrence in the opinion that these growths should be removed. This is a minor operation and it is only along the line of conservative surgical prudence to be assured that malignancy has not yet become established by the examination of a frozen section at once, if the inspection of the speciman microscopically leaves any doubt in the mind of the surgeon.

It is equally rational but requires greater courage to give the same advice in cases of persistent chronic cystic mastitis. When a man of the known ability, experience and conservatism of Ewing states that 50 per cent of the specimens of chronic cystic mastitis that he has examined "show pronounced precancerous changes or miniature carcinomas", it suffices to make thinking men consider very seriously what is to be done with the intractable cases of chronic cystic mastitis. Ewing also states that "very few cancerous breasts fail to show phases of chronic mastitis in the outlying portions of the parenchyma".

I am not yet ready to advise the removal of every breast in which chronic cystic mastitis is present, but when such a breast is persistently troublesome and painful and especially if it contains definite nodules I am in favor of a simple amputation of the breast. During the past two years I have removed several breasts of this type and not only have all the patients been fully satisfied with the result, but they have been relieved of much physical and mental distress and I fully believe some cancers have been prevented.

When carcinoma is already present a quite different problem is presented. The question that now confronts us is not shall an operation be done, but along what lines shall the operation be carried out? An operation for cancer may do more harm than good. It is possible to hasten dissemination by doing the operation in an improper manner. An inadequate operation or one badly planned and executed is worse than no operation.

One who would operate on such a case must know all the avenues along which the disease is apt to travel. Unless the dissection is made through uninvolved tissues peripherally to every cell that is advancing outward from the primary growth the case will not be cured. That should be the task the surgeon sets for himself and he should not take it for granted that if he does not get them all the X ray will pick up the strays. The X ray might also miss them. The operation ought to be carried out as carefully as if there was no such thing as the X ray as an adjunct. I emphasize this because there seems to be an impression that the X ray will do everything that is omitted in the operation.

To fully appreciate how best to carry out the details of the radical operation for breast cancer one needs to consider carefully the lines along which the growth advances away from the primary focus. The prevailing opinion at one time that carcinoma reaches the lymphatic glands in the form of fragments made up of a mass of cells which have been broken off and carried by the lymphatic current to the nearest gland has been proven erroneous, or at least to be only a rare accident in the dissemination of the disease.

When Handley showed that cancer disseminates by a process of budding thus forming long chains of cells within the lumen of the lymphatic vessels and that this process goes on as readily against the lymphatic current as with the current, he thereby revolutionized our conception of cancer dissemination and brought about most radical changes in the mode of operating. He has proven, and his views have been very generally accepted, that the spread of the disease is centrifugally from the primary disease and about as rapid in one direction as another.

The permeation theory of Handley may be represented graphically by a circle to show the location of the primary focus. A larger circle will represent the extent of the disease after a certain time has elapsed. The small primary circle being at the center of the larger one. Later the limits of the disease will be represented by a larger circle and later still by continuously enlarging circles, all the time remembering that each of these circles is parallel to the preceding one and that the minute primary circle occupies the exact center of this system of circles.

For a long time the axillary glands were supposed to be the first and only area invaded after the carcinoma passed away from its primary focus. Therefore, surgeons devoted most of their attention to clearing out the axilla. This is correct as far as these glands are concerned but it only takes into consideration a small segment of the circle and disregards all the rest of the circle along which lymphatic permeation is advancing with equal rapidity. As Handley states the case: "Permeation spreads in all directions with approximate equality, independently of the direction of the lymph stream."

It has been shown by cases examined early that in about one-third the first lymphatic glands invaded are the subclavicular glands, which were usually not removed in the earlier so-called radical operations. The lymphatic vessels in the retro-mammary fascia, in order to reach the subclavicular chain of glands, have to pierce the pectoralis major and minor muscles. Hence to remove the subclavicular glands and preserve the pectoral muscles would probably result in leaving within these muscles lymphatic vessels containing carcinoma cells within their lumen.

One-third of the mammary gland rests on the serratus magnus muscle. If the primary nodule is in the outer hemisphere of the breast, the lymphatics in the underlying fascia will carry carcinoma cells quickly to the serratus magnus and even to the anterior border of the latissimus dorsi. Knowing this one would not carry out a rational operation for carcinoma involving the outer hemisphere without removal of the fascia covering the serratus, the upper three or four digitations of the serratus itself, together with the anterior border of the latissimus dorsi.

The lymphatics accompanying the perforating branches of the internal mammary vessels allow cancer cells to grow by permeation along their lumina directly through the wall of the thorax and invade the pleura and mediastinum. That this is not a fancied danger it has been estimated that pleural invasion is found in 38 per cent of advanced cases. An operation for mammary carcinoma is, therefore, not efficient unless all the deep lymphatic bearing fascia is removed to the edge of the sternum.

Even this extent of removal is not enough. In ten of my own cases, after operation for carcinoma of one breast, the patients have returned after periods of from one to six years, with carcinoma of the opposite breast. These are not supposed to be newly formed cancer but are explained as due to lymphatic permeation. The deep fascia extends across the front of the sternum and the lymphatics from one breast anastomose freely with the lymphatics of the opposite side. Perhaps at the time the operation is done the lymphatics in the fascia in front of the sternum have not yet been permeated by cancer cells and perhaps they have already reached this far. There is no means of knowing positively. It is comparatively easy to raise the skin flap as far as the opposite border of the sternum and excise the fascia to this extent. This procedure adds a small per cent to the chance of eradicating the disease.

The lower border of the mammary gland

almost reaches the xiphoid. It usually touches the fascia of the rectus abdominis and the costal attachments of the external oblique muscles. Where the cancer involves the lower hemisphere of the breast the lymphatics in the deep fascia will serve as a highway along which cancer cells will invade these muscles and the peritoneum will be quickly invaded by infiltration. The cells then fasten themselves on the dome of the liver or invade it by way of the falciform ligament. On an average of 44 per cent of autopsies, metastasis of the liver has been found.

This fact has brought about another modification of the radical operation for breast cancer. The skin incision is carried downward in the median line over the epigastric region almost to the umbilicus. All the underlying fascia, the sheath of the upper segment of the rectus abdominis and the upper portions of both external obliques are removed.

By carrying out a dissection such as has been outlined it will be found that the deep fascia removed will be almost a perfect circle, the primary growth in the breast occupying almost its exact center.

A very wide excision of the skin is useless, because extension along the cutaneous plane is very slow as compared with the growth within the lymphatics in the deep fascia. Skin invasion at a distance from the primary lesion is due to growth outward from the deep fascia. If the operation is done comparatively early and the skin is removed for a distance of two inches in every direction from the primary growth all the involved skin will be removed except in the very rare instances. If a skin extirpation of this extent does not suffice it may be considered certain that the lymphatic permeation along the deep fascia has passed beyond reach of the most radical measures.

In operating for carcinoma of the breast no half hearted measures should be tolerated. The operation should mean complete extirpation of the deep fascia including glands and muscles from the latissimus dorsi externally to the opposite border of the sterum internally and from the very upper portion of the axilla above to, and including, the fascia of the portion of the rectus abdominis covering the epigastric angle below.

The objection often brought against such an extensive operation is that it is such a maiming procedure. The answer is that it does not maim one-tenth as much as the disease will if left to itself. If the skin incision always is carried in front of the axilla, if the arm is always kept at a right angle to the thorax for the first few days, and if the patient begins moving the arm early, the function of the arm will be maintained. My patients are put through a regular system of gymnastics several times daily, beginning the second day after the operation. Almost every case is able to raise the arm straight up and has practically the normal range of motion in every direction by the day of discharge from the hospital.

Even under the present conditions the outlook is less gloomy than many seem to think. Several years ago I brought together my statistics of 190 cases which showed about 60 per cent alive and well over five years after the operation. I have just been making another follow up campaign and have replies from 80 cases, all of which were proven out by the microscope to have carcinoma of the breast. Of the 80 cases 42 are alive and free of any recurrence from three to twenty years following the operation. The other 38 had died of recurrence of cancer or of some so-called intercurrent disease which I could not be sure was not a metastasis. Many others of my cases are still alive, but, since they were not proven out microscopically they are not considered in making up the finals. Such a showing seems to be sufficiently hopeful to make it worth while to continue our efforts and to redouble our energy in the popular educational campaign which is being carried on.

When a regularly standardized operation which takes practical advantage of the known avenues of extension of cancer of the breast is generally adopted the percentage of cases remaining well will be greatly increased. When surgeons form the habit of doing these operations with the avowed object of permanently relieving their patients and not with the feeling that they are performing a merely palliative operation it will make for a thoroughness in their work which has not yet been generally attained. A higher ratio of favorable results produces more optimism, a hopeful frame of mind on the part of the surgeon induces him to do a more adequate operation, relieved patients cause their friends to consult their physicians about suspicious lumps earlier, and earlier operations are followed by a still larger number of good results.

DISCUSSION

M. G. WOHL, M. D., Omaha: I always enjoy the papers presented by Dr. Davis, for they are so full of optimism and contain so much food for thought. However, I shall take issue with the doctor on one or two points. You know the pathologist dealing with cold specimens, studying his tissues carefully, and uninfluenced by the "human touch" which enters often in the verdict rendered by the surgeon, comes to a different conclusion as to the incidence of "early cancers" and the curability of genuine malignancy. We have heard a great deal here of late of precancerous lesions—conditions that are claimed to possess potentialities of terminating into malignancy if not removed early. I'll admit that this makes good propaganda matter for the laity, however, at a medical meeting of this type, which is not a mutual admiration society, when we begin to take inventory of accurate facts, we soon realize that there is no scientific foundation for the assumption of the existence of a precancerous state.

We are living and sooner or later we die; are we, therefore, always in a predeath stage?

In glandular organs, like the breast, prostate and stomach, hypertrophic and inflammatory conditions give rise to a histologic picture that one is tempted to look upon as precancerous; yet nobody has ever demonstrated the actual transformation of these conditions into carcinomata. In our experience of examining over five hundred specimens of the breast we have found in the vicinity of carcinomatous areas inflammatory changes of the chronic cystic mastitis type, in a large percentage of the cases; yet we were unable to point out any particular area where inflammatory lesions stopped and carcinoma commenced. In tuberculosis and squamous cell carcinoma of the breast, one likewise sees cystic mastitis changes, yet because of this association we are not claiming that mastitis has passed into either of the two.

We are, therefore, forced to the conclusion that no sufficient proof has been offered of the existence of "precancerous conditions" of the breast. If we judge the results of radical breast surgery from this point of view, we shall become less optimistic as to the cure of "early" cancer.

A point of practical importance is the necessity of the surgeon to become thoroughly familiar with the naked eye appearance of cancerous tissue. The surgeon is not always in a position to have the microscopist present at the operation, and this is particularly true of the surgeon of today, since surgery, in the middle west at least, is being done more and more in the smaller communities rather than the country doctor sending away the surgery to the larger centers; if the surgeon would acquire the habit of studying the gross appearance of the tissue he removes, he will become sufficiently skillful in pathologic anatomy to be able, in a high percentage of cases, to recognize cancer when he sees it. It is true that there will still be left about 22% of breast pathology that will require skilled microscopic diagnosis.

What information does the surgeon require from the pathologist in breast pathology? It is this—whether the particular tissue he removed is malignant or not. If it is malignant, he will proceed with his breast amputation; if it is not, he will be content to remove the diseased tissue only. There should be no border line opinion, as it is often misleading, rather than helpful. It is our opinion that a lesion is either cancer or not cancer, and this is determined, not by the recognition of the character of the particular cancer cell, but rather by the relationship that exists between the functioning epithelium and its supporting framework—connective tissue stroma.

I recently had an opportunity of discussing this very same subject with Dr. Hertzler, and am glad to state that he fully approved of this viewpoint. The crux of the situation is this; if we realize that carcinoma starts as such and that inflammatory changes of the breast have not been proven to have undergone malignant changes, less radical surgery will be done and fewer breasts sacrificed.

MAX EMMERT, M. D., Omaha: I would like to take issue with Dr. Davis upon the relationship between carcinoma of the breast and chronic cystic mastitis. Autopsy statistics show 25 per cent of all senile breasts have undergone chronic cystic changes.

He quoted Ewing's statistics that 50 per cent of these cases were potentially malignant. We must remember these are based upon dead tissue. If we assume the attitude that every breast which has lumps in it is potentially malignant, we are going to remove the breasts of, roughly, 60 to 70 per cent of the women we examine over the age of forty-five.

One thing to remember with respect to carcinoma of the breast is that it starts as a single tumor; hence when you find the senile breast with multiple nodules, we are safe to assume it is a benigh breast and does not need to be removed.

I am in accord with Dr. Davis in his operative procedure. I have always felt when we have a definite carcinoma we can not be too radical. However, in all carcinomas of the breast, I think as far as our prognosis is concerned, we have not done our duty until we have had an X ray picture of pleura and mediastinum before we operate. Our metastasis is through the intercostal spaces into the mediastinum and thoracic cavity along and through the fasciae of the upper abdomen into the liver, also into the axilla and neck. So that if we find upon X ray examination that there is metastasis in the thorax, we are not justified in promising that patient even the possibility of a cure. We can remove the breast to save the patients the suffering which they undergo in late stages, but we can not cure them.

A. E. HERTZLER, M. D., Kansas City, Mo.: As to tumors of the breast of which Dr. Davis speaks, I may say that I have attained that period in life where a certain amount of discretion comes as a natural course of events. Among one of the things I have learned is, don't monkey with a buzz saw! I have known Dr. Davis for twenty-five years, and if you don't mind, I will talk about breast tumors in the abstract!

Now the central thing in any breast pathology is that question of the relation of interstitial metastasis to breast cancers. Some years ago I thought I would write a paper on the errors I made on tumors of the breast. That time has gone by. If I ever write it, it is going to be a book, because it won't all go in a paper.

I have some "hunches" on the fundamental changes that apply to the question of precancerous lesions. What happens is this: (Illustrating on blackboard) we have an increased nutrition of the acinal cells. Here is the basement membrane. In my judgment, what happens first is that the cell becomes more active and loses its secretory capacity and takes on a proliferative one. This normal connective tissue loses its basophilic character. It becomes paler and finally approaches the tinctural capacity of fibrin. If you take any of the dyes of the O. H. group—Sudan III has been most used—the first thing that happens is the acidophilic property disappears. It approaches the property of fibrin. Just the extent you can make that change, your epithelioma will advance.

I think that gives a clue of what we might mean by precancerous lesion. Cells that have taken on this increased basophilic capacity for dyes have the capacity for lessening acidophilic property of the connective tissue. In many of these chronic lesions of the breast, however, the primary changes seem to be in the connective tissue. As a result of independent processes the connective tissue loses its acidophilic property. I think unquestionably the fundamental thing is in the loss of balance between the basophilic and the acidophilic in tissue.

Now, just how are we going to interpret this clinically, things going on deep in the breast, is another proposition. Like Collins said about Jackson's pitching: "You can't hit what you can't see," and you can't diagnose what you can't feel. The trouble is you may have a thing going on in the breast and you can't feel it. It is shut off by the fibrous tissue and the little cysts from the skin give you a sense of smoothness, and yet the lesion is going on beneath. The early stages go on without presenting any symptoms. I have seen too many cases where the first thing noted was a metastatic lesion in the axilla.

I remember a friend of mine in whom the lesion in the breast never was discovered. I removed the breast and sectioned it, but the lesion was so small it was never found, at least not yet. That is very apt to be the difficulty—to find the lesion. You can diagnose it if you can find it.

My practice in suspicious cases is to expose the breast and make sections at the operating table and see what I can see then and there. There is only one thing for the surgeon, and that is to learn the gross appearance of these things before they get to the operating table. If you do not know carcinomatous tissue when you see it, you cannot cut out the proper place for the microscopist to diagnose; and if you do not cut the right place, the pathologist is helpless. Therefore, the surgeon must work out his own salvation.

This question of diagnosing breast lesions is the hardest problem with which the surgeon has to deal. As time goes on, I am more willing than ever to listen to the patient. If she has continued pain in the breast, I am perfectly willing to give it weight. You must estimate the nervous stability of the patient. If some good mother complains of persistent pain in the breast, I am willing to believe there is something going on. I think the best thing said is that by Halsted, who said it takes an hour to examine a breast. Most of us give it a grab or two and form a judgment.

After all is said and done, there is going to be a certain percentage of errors in spite of everything, because we cannot find the lesion either at the operating table or sometimes at the pathology table. I am perfectly willing to listen with the greatest sympathy to anybody when he tells about the troubles he has in the diagnosis of breast lesions. My reply to men with such a broad experience as Dr. Davis is, don't tell me your troubles, I have plenty of my own.

B. B. DAVIS, M. D., Omaha: I have succeeded in one thing I was endeavoring to do, and that was to stir up a little hornet's nest.

I think two of the gentlemen who have discussed the paper have rather taken the wrong idea of what I meant in regard to the removal of the breast in mastitis. I do not mean the removal of even a small proportion of those cystic mastitis cases. It is those cases that are painful, persistent, and really amount to invalidism; and it is done more for the purpose of relieving the patient of what she is temporarily possessed of.

When I spoke of Ewing, I spoke of a man with an exceedingly large experience in this particular class of cases. He does not examine cases of chronic cystic mastitis that are mild. It is cases that have produced a lot of trouble he examines. As he states in his book, 50 per cent either have small carcinomas already present, or a very distinctly precancerous condition which he thinks would become cancerous within a short time.

This whole question of chronic cystic mastitis is in a state of chaos. That is one of the reasons I felt like bringing it before you. If you will read the literature for the last three years, you will find articles worked out by different men who are diametrically opposed to each other as far as results are concerned. Read the article of one and you think every case of chronic cystic mastitis should be removed. Read Bloodgood and he thinks the other way. Ewing and others come in between.

I do not believe that we get a carcinoma originating from a normal cell. When your carcinoma starts there is something there which is abnormal in connection with the cell or cells from which it starts or it would not become a carcinoma. Is there anything in this benign pathology which exists which helps it to get into a condition whereby a carcinoma can be developed? That is a thing pathologists can not answer. We are asking them to give us more light on this subject. We are not getting more light, but in the main we are groping in the dark as we have been doing for the last years.

NEW WORK ON INSULIN

Recent investigations indicate that a substance like insulin, the new remedy for the treatment of diabetes, exists in tissues of the animal body other than the pancreas. This substance has been called "glucokinin" and has also been found in considerable quantities in such plants as lettuce and onion tops, and in yeast. It has also been found that insulin is of value in the treatment of certain conditions known as acidosis and ketosis which occur in diseases other than diabetes.
—Hygeia.

THE DIAGNOSIS OF OBSCURE TUBERCULOSIS.*

Miles J. Breuer, M. A. M. D., F. A. C. P., Lincoln, Nebr.

We have been congratulating ourselves during the past decade, on having conquered tuberculosis, and feeling very proud of our victory. However, to one who studies the field closely and honestly, it cannot help being apparent that we have only made an impression on this dread enemy of human health; that what has been accomplished is very little beside what remains to be done. It is especially in the two extremes, the diagnosis of early cases, and in the control of far advanced cases, that real progress has been lacking. In the matter of advanced cases, medical science has not yet pointed out a way to accomplishment; in that of early diagnosis, the way is clear, but is not being followed. There still remains a lamentably large number of men who refuse to make a diagnosis of tuberculosis unless bacilli are present in the sputum and rales in the chest; in other words, until the disease has reached an advanced stage. In the stage where treatment is possible the diagnosis is overlooked; and in order to make the diagnosis, the patient is allowed to reach a stage where treatment is a doubtful fight against overwhelming odds.

In a recent series we had 25 cases of pulmonary tuberculosis which had previously been subjected to surgical operations on the basis of the symptoms they presented, including appendectomies, tonsillectomies, gastro-enterostomies, gall-bladder operations, and female pelvic surgery. The symptoms, which had not been characteristically surgical, but typical of chronic tuberculosis of the lung, were not relieved by the operation; but were relieved after from 3 months to two years of management for pulmonary tuberculosis.

In a paper as brief as this, it is not possible to present the technic of diagnosis in the form of working instructions. The details are many, and the considerations complex, so that only a general discussion is possible. The appended bibliography covers the ground thoroughly.

A preliminary consideration of the pathology of the disease will make the discussion on diagnosis a little more clear. The bacilli gain access to the lung through the tracheobronchial lymph nodes, the primary infection usually dating back to childhood. Extension may be by direct spread, through the lymphatics, along the bronchi, or by the blood stream. In most cases the original lung lesion is in the right apex, that being the part that has the least movement, and, therefore, the slowest circulation, lymph drainage, and ventilation. When a tubercle bacillus establishes itself, the first result is a proliferation of the connective tissue cells around it; a mass of these young connective tissue cells, or epithelioid cells, is formed, and is surrounded by an area of exudate of lymph and small round cells. The process is very slow, and this stage may continue for months or years. In this stage there are no bacilli in the sputum, nor even any sputum; X ray findings may be present or absent; but the disturbance in the lung produces very definite physical signs. After the tubercle of epithelioid and giant cells becomes so large that its center cannot be nourished by diffusion, as it has no blood vessels, necrosis or caseation takes place. When this caseation happens to include the lumen of a bronchus, tubercle bacilli will appear in the suptum. Healing takes place by fibrosis or calcification. There is usually involvement of the neighboring pleura.

Depending on the vicissitudes of the patient's general condition and his surroundings, he may have at various times larger or smaller numbers of these tubercles present, spreading by various methods, and in various stages of evolution and retrogression. Therefore, an immense variety of pathological conditions and clinical pictures is possible. No two cases are alike. No single clinical finding can be considered pathognomonic; in making the diagnosis, one must reason back to the pathology.

In making a diagnosis, it is not sufficient to determine whether or not tuberculosis is present. It is necessary to establish whether a healed condition is present or an active process exists; and whether the patient's complaint or illness is due to that active process or whether the tuberculous process is secondary to some other debilitating lesion. Thus, a pulmonary tuberculosis may become active because of the drain on the system from a chronic appendicitis, and recover spontaneously when the appendix is removed. Or, an active tuberculosis may give reflex symptoms exactly simulating appendicitis, which can be relieved only by prolonged tuberculous management.

The history, physical examination, X ray, and laboratory examinations, are all very important. It cannot be said that any one of them is more important than the others in all cases. Cases of tuberculosis differ from each other as do individual personalities, and no one diagnostic method is applicable to all of them. In one case the diagnosis may be made chiefly on the history; in another it is the physical examination or X ray that gives the most important evidence. A series of cases of tuberculosis will tax all of one's diagnostic resources; there is no other way of arriving at results than by making in each case, a thorough, careful, and complete examination.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

Various specific laboratory tests for tuberculosis have had their day and passed. Upon a priori grounds, based upon our present knowledge of the disease, it does not appear probable that there will ever be any single pathognomonic test to make our diagnosis for us, as there is in typhoid fever or malaria. The wide distribution of the pathology among the human race in either active, healed, or latent form, the fact that the pathology with its specific diagnostic phenomena is present in a large number of persons who have no symptoms and consider themselves perfectly healthy, and that clinical manifestations depend mainly on individual variations in resistance, make the specific laboratory tests valueless in the individual case. A post mortem examination, or the constant finding of large numbers of tubercle bacilli in the sputum over long periods of time, are the only absolutely pathognomonic laboratory findings.

In eliciting the history, it is not sufficient to let the patient tell his story. Too many considerations are involved which do not seem to him connected with his complaint, and which it will never occur to him to relate; therefore, a systematic list of questions is necessary. The family history is important, not because the disease is inherited, but because the bacilli are inherited in the same manner that clothes and furniture are inherited, and surroundings and habits which produce tuberculosis are inherited. The patient's past history, of severe infections, of attacks similar to the present one, of his manner of living and working; the onset, with its history of debilitating influence to explain the lowering of resistance and the flare-up of the disease, infection, exposure, exhaustion, worry, etc.; the loss in weight, strength, and ambition, and whether they were sudden, chronic, or periodic, are all important in arriving at a diagnosis. Everyone of the organ systems must be covered in the questioning, for there is not an organ or a function in the body that may not have its tale to tell to the careful diagnostician.

Thus, in the gastro-intestinal system, hemorrhoids and fistulae are frequently secondary to pulmonary tuberculosis, and gastro-intestinal symptoms due to disturbance of the autonomic nervous system, occur at some time or other in every case. Or, in the respiratory system, it is necessary to distinguish the two kinds of cough, the productive cough which expels pathologic material from the bronchi, and the reflex cough due to recurrent-laryngeal irritation which is often unnoticed by the patient himself and reported by those who associate with him. In a series of 100 cases, the following are the "leading symptoms" or complaints which brought the patients to the doctor; many of them do not appear to suggest pulmonary tuberculosis even remotely, yet every one of them is directly traceable to the pathology:

1.	Gastric disturbances	24
2.	Pain in the chest	9
3.	Loss of weight or underweight	9
4.	"Nervousness"	8
5.	Weakness	7
6.	Cough	7
7.	Amenorrhea	6
8.	Dysmenorrhea	4
9.	Furunculosis	4
10.	Intestinal disturbances	3
11.	Bronchial and nasopharyngeal catarrh	2
12.	Pain in right arm or shoulder	2
13.	Backache	2
14.	Tachycardia	2
15.	Dyspnea	2
16.	Headache	2
17.	Anorexia	2
18.	Rectal fistula	1
19.	Sexual impotence	1
20.	Fainting spells	1
21.	Aphtha	1
22.	Chills	1

In the physical examination, inspection is in most cases the most important of all methods. This applies with especial force in early cases. The general nutrition of the patient, his facial expression, his carriage and movements, the expansion of various portions of the chest, are important; but particularly so are the neurological or reflex signs. These are best elicited by a combination of inspection and palpation, and consist in the increased or decreased tensions, and atrophies or hypertrophies of the muscles of the shoulder-girdle. A relative emaciation about the shoulder-girdle with good nutrition elsewhere speaks volumes, as do a fullness of one side of the neck, a pointed or sagging shoulder, a flat pectoral region, a wing scapula, a tilted head. To elicit the fine points of these various signs, a concentrated light from one direction is necessary. The power of the various muscles and the sensibility of the skin in various regions about the shoulder girdle supply important information.

Percussion must be light in order that slight and localized differences in density may be recognized. Heavy percussion vibrates the entire lung, and yields no information except in very marked consolidation. For proper work, absolute silence in the room is necessary. Pitch as well as resonance must be considered in the percussion note; pitch varies with slight degrees of infiltration, while heavy consolidation is required to impair resonance. The examiner must train his ear to recognize differences in pitch.

In the field of auscultation, rales are a late sign; waiting for rales before making the diagnosis decreases the patient's chance of recovery. A fine crackling due to a moist exudate in the bronchioles appears early and is elicited by first completely emptying the lungs of air and then taking a deep breath. A slight granular roughening at the end of inspiration indicates exudate in the bronchioles. The quality of the breath sounds and the variation in vocal and whispered resonance are excellent clues to slight and localized infiltrations.

For an adequate examination, the following procedures should be carried out in addition to the physical examination: Stereoscopic roentgenogram of the chest, blood pressure, examination of sputum specimens over a number of weeks, urinalysis, hemoglobin, red, and white cell counts, and temperature and pulse record over two or three weeks. These things are just as necessary to eliminate other possibilities in the diagnosis, as they are to confirm that of tuberculosis. In the individual case, some may be dispensed with, or others not mentioned may be required.

The interpretation of the findings must be as systematic and logical as their elicitation. For this purpose they are best divided into the following groups:

TOXIC SIGNS: Temperature, loss of weight, anorexia, night sweats, early fatigue, tachycardia, headache, low blood pressure, etc. These merely indicate the presence of some chronic infectious process; they might be equally characteristic of tuberculosis or chronic appendicitis or tonsillitis. But they constitute one link in the chain; in connection with other signs they serve as a measure of the degree of activity of the process.

REFLEX SIGNS: These are the earliest evidences to appear, and may be found by careful observation before X ray findings are present, and long before the classical rales, cough and consolidation. They consist in the afore mentioned changes in the tension, power, and size of the muscles of the shoulder-girdle; they are produced in the same way as are the physical findings in the abdomen in appendicitis or in the lumbar region in nephritis. The mechanism of their production cannot be discussed in a paper of this length, but a full bibliography is appended. They indicate a process in the lung, not necessarily confined to the apex. Other reflex signs are produced by the irritation of the vagus, phrenic, recurrent laryngeal, and other nerves in the thorax, and consist in tachycardia, gastrointestinal symptoms, reflex cough and voice disturbances, restricted or retarded expansion of the chest, and pains in the chest.

LOCAL SIGNS consist in the various manifestations of infiltration or consolidation, such as changes in percussion note, voice, and breath sounds; rales, and productive cough.

X RAY EVIDENCE is not absolute or final. At the present stage of knowledge, the interpretation of an X ray plate of the lung is a matter of the personal equation of the roentgenologist, and is far from being in the same logical class with X ray evidence of a fractured bone. It has the same value in the diagnostic structure as any other individual physical finding. In practice, X ray evidence is very valuable in some cases, of limited value in others, and in a certain group, of no assistance at all in making the diagnosis.

LABORATORY: In the very class of cases that it is most important to recognize, the incipient ones, sputum is lacking. The leucocyte count is low, unless complications exist;

6,500 is our average and 7,000 the count in the largest number of cases. The red cell count is near normal, but the hemoglobin and blood pressure are low.

It will be seen that the diagnosis of an early case must be made on circumstantial evidence. This evidence indicates (1) a lesion in the upper part of the lung which is infiltrative and exudative in character, and (2) a chronic, debilitating, toxic process. This precise picture is present in non-tuberculous lesions with such extreme rarity, that, if the history and physical findings are carefully and skilfully elicited, if the interpretation of these is clearly and logically made, and if other possibilities are thoroughly considered and excluded, the chances for error as based on the law of probability will be in the fractions of a per cent. As a logical reasoning process having for its object the ascertaining of facts, this method is far more rigid and conclusive than that which yearly sends hundreds of thousands to the operating table for appendectomies and pelvic surgery; it is certainly more rigid scientific proof than our present evidence for the diagnosis of the majority of cases of gastric ulcer; it is the same class of evidence on which syphilis is diagnosed today with the exception of primary lesions. But it is not as absolute proof as the basis on which we today diagnose typhoid fever or diphtheria.

In the differential diagnosis, if the entire clinical picture is kept clearly in mind, there are not many conditions to consider. There are many conditions resembling a chronic low grade tuberculosis but few with which it should be confused if the case is carefully studied; and these are rare. The fungus infections of the lung, streptothrix, leptothrix, and actinomycosis in the early stages before organisms are eliminated, would be confusing. Pulmonary syphilis and tumors of the lung offer the greatest difficulty, as a Wassermann test does not exclude tuberculosis, and a temperature is not always a differentiating factor. It must be remembered that tuberculosis frequently coexists with other conditions, either primarily or secondarily; therefore, when tuberculosis is the verdict, the diagnosis is never complete until other conditions have been excluded. Through the entire course of treatment, a lookout must be kept for conditions which may be keeping down the patient's vitality and providing an opportunity for the tuberculosis to keep its hold; or for conditions that may have obtained a hold in the system because of the debilitated condition from the tuberculosis.

The reason that so many cases of early and low grade tuberculosis pass undiagnosed is the failure to get the proper conception of tuberculosis as a locally proliferative and systemically toxic process, at the basis of which there may be for a long time only a very few bacilli (even a dead bacillus will produce the typical process, though its course will be self-limited); a process which goes along for many months or years before it reaches the necrotic stage of rales and bacilli in the sputum; which often undergoes fibrosis without reaching the necrotic stage, and which gives during all of this time, other clinical evidence of its existence which is quite plain and clear to him who is able to recognize it.

BIBLIOGRAPHY

Coplin, Changes in the Intercostal Muscles and the Diaphragm in Infective Processes Involving the Lung and Pleura, Am. Jour. Med. Sci., Vol. 127, p. 754 (1905).

Wheaton, Integument Atrophy; A Sign of Diagnostic Importance in Early Pulmonary Tuberculosis, Jour. A. M. A., June 25, 1910.

Wolff-Eisner: Light Tough Palpation and Muscle Rigidity as a Sign for Recognizing Lung Disease, Deutsche Med. Wchnschr. April 21, 1916.

Cyriax, On Reflex Contraction of Muscles Associated with Pulmonary Disease, Medical Record, June 17, 1911.

Pottenger, The Significance of Lagging of the Chest Wall as a Sign of Intrathoracic Disease, Archives of Diagnosis, January, 1912.

Pottenger, Neck and Chest Pains in Pulmonary Tuberculosis, Trans. Am. Climatological Assn., 1912.

Pottenger, A New Physical Sign found in the Presence of Inflammatory Conditions of the Lungs and Pleura, Jour. A. M. A., March 6, 1909.

Pottenger, Spasm of the Chest Muscles, Particularly the Intercostals as a Physical Sign of Disease of the Lung. Am. Jour. Med. Sci., May, 1909.

Pottenger, The Outlining of Normal Organs and the Diagnosticating of Diseased Conditions of the Pleura and Lungs by Means of Palpation. Lancet-Clinic, December 11, 1909.

Pottenger, Some Practical Points in the Diagnosis of Active Tuberculosis. Northwest Medicine, January, 1914.

Pottenger, The Relationship of Pulmonary Tuberculosis to the Vegetative Nervous System. Trans. Section on Medicine, A. M. A., 1917, pp. 173-186.

Pottenger, The Importance of the Study of Pathological Physiology in Internal Medicine; Illustrated by the Analysis of the Symptomatology of Tuberculosis. Mississippi Valley Med. Jour., June 1917.

Lemon, Lesions Affecting the Vagus Nerve, Med. Clin. N. A., Vol. 7, No. 1, July 1923, page 293.

Breuer, M. J., Tuberculosis in Discharged Soldiers, American Review of Tuberculosis, V. 8, Oct. 1921, p. 678.

Breuer, M. J. & R. G., Physical Signs of Tuberculosis, Nebr. State Med. Jour. VII, 2, Feb. 1922, p. 37.

Norris & Landis, Diseases of the Chest, and Physical Diagnosis, 2nd edition, Saunders, 1920; Chapter XXII.

Mackenzie, Symptoms and their Interpretation, Shaw & Son, London, 1909.

Gaskell, The Involuntary Nervous System, Longams Gree, London, 1916.

Pottenger, Clinical Tuberculosis, Mosby, St. Louis.

Pottenger, Muscle Spasm and Degeneration and Light Touch Palpation in Intrathoracic Inflammations, Mosby, St. Louis, 1912.

Pottenger, Symptoms of Visceral Disease, Mosby St. Louis, 1919.

Higier, Vegetative Neurology, Nervous & Mental Disease Monographs, No. 27.

Riviere, Early Diagnosis of Tuberculosis, Oxford Press.

Muthu, Pulmonary Tuberculosis, Wm. Wood & Co.

Hawes, Early Pulmonary Tuberculosis, Wm. Wood & Co.

THE GOITER PROBLEM*.

J. C. Waddell, M. D., Beatrice, Nebr.

The studies of Marine and his co-workers on the incidence of the enlargement of the thyroid in the school girls of Akron, Ohio, call attention in a most striking way to the prevalence of goiter in this country. Out of hundreds of girls examined by them, more than half showed some detectable enlargement of this gland. Even more astounding is the work of Simon Levin who reports his examination of 1783 unselected persons living near Lake Superior in whom he found 1146 goiters. In addition to these cases of endemic colloid goiter there seems to be an increasing number of goiters of the adenomatous and exophthalmic types and so the goiter problem becomes increasingly more complex.

Because in times past there has been much confusion of types of goiter and much difficulty in diagnosis and classification and, as a result, much improper treatment, we believe that this problem is well worth our careful study.

Dr. Plummer of the Mayo Clinic is, we believe today, the best authority on goiter. He has had opportunity to observe a very large number of cases and his tireless study of these has resulted in some very valuable conclusions.

He believes that there are only three types of goiter. The colloid, the adenomatous and the exophthalmic.

Because we feel that Dr. Plummer's classification is correct and practical and because it is the classification we use in the diagnosis and treatment of these cases, we shall follow it in our discussion.

We believe that this classification is the first step in the simplification of this problem.

We shall briefly describe these three types.

First. Colloid Goiter. Colloid goiter is definitely a goiter of youth and occurs between the ages of 12 and 25 years. In this group are included the so-called adolescent goiters. This type produces the uniform fullness of the neck so often seen in young women.

Second. Adenomatous Goiter. This is the most common type. Although it seemingly develops in persons of middle age the probability is that its true origin dates back to early life, as a careful history often gives the information that the enlargement was first noticed between the ages of 15 and 20 years.

The enlargement is produced by the growth within the substance of the gland of encapsulated adenomata. They may produce only a slight irregular enlargement of the gland or they may produce an enormous increase in size. The largest goiters are of this type. The thyroid enlargement here is not uniform or symmetrical.

Third. Exophthalmic Goiter. This type may occur at any age but probably most often occurs in the third and fourth decades of life. In many instances the disease develops suddenly. In some the onset is insidious. The gland here is symmetrically enlarged and usually quite firm and hard.

ETIOLOGY. There can be but little doubt that a scarcity of available iodin in the system has much to do with the production of colloid goiter. That it is produced by the drinking water in certain localities is an old theory. It is now believed by many that it is not due to any particular substance in the water but to a lack of certain ingredients—notably iodin. As many of these goiters begin in early adolescence when great changes are taking place in the entire body and when all glandular tissue is called upon for increased activity it is possible that there is an increased demand for iodin and that there may be an endocrine imbalance which tends to produce the goiter.

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

Adenomatous goiters are generally believed to start from foetal rest cells, and like the colloid type usually begin at a time in the individuals life when there is increased work thrown on all glandular tissue, i. e., during the adolescent period.

Two conceptions are current at present regarding thyroid function in the production of the symptoms of exophthalmic goiter. The first is that the symptoms are due to a pure overactivity of the gland the secretion of which is normal but that it is poured out in excessive amounts. This hypothesis commonly goes under the name of the hyperfunction theory.

The second theory is that there is not only an excessive amount of the secretion but that there is some change in the secretion to produce the syndrome of symptoms that we find in this disease.

The symptoms in the first instance might be said to be due to a hyperthyroidism while in the second case they might be attributed to a dysthyroidism.

Predisposing factors may be found in age, sex and emotional strains as well as in the over activity of other endocrine glands.

Physiological reactions are being discovered that indicate that thyrotoxicosis may have more far reaching associations than just the thyroid.

DIAGNOSIS—We shall stress diagnosis in the discussion for at least two important reasons.

First: Because we believe that diagnosis is always of primary importance in any condition and that without it all treatment is empirical. And, second, diagnosis is of utmost importance in goiter because the different types of goiter requires different treatments.

We must differentiate the different types one from the other and we must differentiate goiter from conditions with similar symptoms.

Clinically then, colloid goiter is recognized by the symmetric enlargement of both lobes and the isthmus and by the characteristic granular feel it imparts to the palpating fingers. In many instances it produces no symptoms except perhaps slight worry and nervousness over the knowledge that it exists; or probably some pressure symptoms.

In some instances this type is associated with nervous symptoms and tachycardia that render the diagnosis impossible from exophthalmic goiter except for the basal metabolism test or possibly the Kottman serum test. The basal metabolic rate is normal or slightly lower than normal in colloid goiter and always increased in the exophthalmic type. Thus by this test these two types can be positively distinguished one from the other and as the treatment is very different the importance of basal metabolism readings is further emphasized.

Clinically adenomatous goiter may be recognized by the irregular type of growth which it produces.

A single or many rounded tumors may often be felt on palpation. These goiters may be cystic, soft, hard or even stony-like depending on the degenerative changes that have occurred. Some of these goiters—Plummer claims 23%—become toxic and present symptoms of thyrotoxicosis. The metabolic rate in these toxic cases while increased is rarely if ever as high as in the marked types of exophthalmic goiter. The basal metabolic rate should be determined to find the degree of toxicity and the treatment should depend largely upon these findings.

Clinically exophthalmic goiter is recognized by the presence of a symmetrically enlarged, firm gland and by the symptoms of nervousness, tachycardia, tremor, flushed moist skin, loss of weight and strength. Eye symptoms may or may not be present and symptoms of this disease may appear before there is any perceptible enlargement of the thyroid. The basal metabolic rate is always increased in an exophthalmic goiter and in this type reaches it greatest height.

It often becomes necessary for the physician to differentiate toxic goiter and particularly exophthalmic goiter, before there is any enlargement of the thyroid, from a number of nervous states and other diseases presenting similar symptoms. In all of these cases the history, the symptoms, and the physical findings must be given due emphasis but in many instances without the basal metabolic rate test we would be unable to arrive at any definite conclusions.

Since we regard this test of so much importance in the classification of goiter and in the differentiation of goiter from a number of other conditions we will give briefly the scientific basis for this test and its application.

Lavoisier, a Frenchman, after much brilliant research work on the nature of oxygen, carbon dioxide and heat in connection with the human body, arrived at the conclusion that the life processes are those of oxidation with the production of heat. Since his time it has been positively demonstrated that Lavoisier is correct and further that the complete combustion of substances in the body is not only qualitatively but quantitatively the same as the burning of these substances outside of the body. Consequently it is now possible to calculate the amount of heat produced by the metabolic processes of the body from a knowledge of the oxygen consumed or the carbon dioxide eliminated in a given time. For clinical purposes these factors can now be determined by a trained man with a high degree of accuracy. In order to compare the heat production of one individual with another it is necessary to eliminate such disturbing factors as muscular activity and the stimulating action of food. For this reason it is necessary to require total abstinence from food, and require rest in bed for at least 12 hours before the test is made. The heat production obtained under these conditions is known as the basal metabolism or the basal metabolic note. From this it is seen that the basal metabolism test rests upon a fairly scientific basis.

This test allows a clear cut division to be made between diseases in which the metabolism is increased, decreased or remains normal.

Taken with the history, symptoms, and physical findings it enables the physician to determine the most probable cause of the disordered metabolism. Such a division is of great value for it is based on an accurate knowledge of the rate at which the body cells are actually living.

Important as is the diagnostic value of metabolic study in endocrine disorders, it is of no less value in determining the method and degree of treatment. The determination of the basal metabolism will give in mathematical terms the value of that treatment. In other words it is a check on treatment as well as a means of diagnosis.

Diseases of the thyroid gland with their extreme variations in basal metabolism afford a striking example of the value of these studies. For example, in exophthalmic goiter the rate may rise over 100% above normal and in myxedema with apparent complete cessation of thyroid activity it may fall 40% below normal. In milder cases of both groups the variations are correspondingly smaller.

Neurasthenia, hysteria, autonomic imbalance or nervous exhaustion show no definite change in metabolic rate, hence the test is of great value in differentiating these conditions from toxic goiter.

TREATMENT—— In the discussion of treatment we must sharply distinguish simple colloid goiter from exophthalmic goiter; toxic goiter from non-toxic goiter. Simple colloid goiter includes all those thyroid enlargements which were formerly grouped as endemic, epidemic, sporadic and physiological.

No accomplishment in preventive medicine has a firmer physiologic and chemical foundation than that underlying the prevention of simple goiter.

While the ultimate cause of simple goiter is totally unknown, the immediate cause is a lack of available iodin. The enlargement of the thyroid here then is a symptom and may result from deprivation of iodin. We must then conclude that the enlargement of the thyroid in simple colloid goiter is a compensatory process arising in the course of a metabolic disturbances and depending on a relative or absolute deficiency of iodin. How then can we prevent this type of goiter?

Briefly by the administration of from one to two grams of sodium iodid in doses of .2 to .4 grams distributed over a period of two weeks and repeated each autumn and spring.

In explanation of this statement let us state that much animal experimentation has been done in the prevention of simple goiter and the disease produced and prevented at will by the withholding or the giving of iodin in very small amounts.

The first experimental work with the human was done in 1917 by Marine and his co-workers with the school population of Akron, Ohio. The results of two and one-half years work on these school girls are as follows:

Of 2190 pupils taking 2 grams of sodium iodid in divided doses twice yearly, only five have developed enlargement; while of 2305 pupils not taking the prophylactic, 495 have developed the disease. Work has been done at Cleveland with similar results.

Now as to the treatment of this type of goiter. This is distinctly medical. Only when the goiter has reached such a size and such changes have occurred that pressure symptoms are present should this condition be considered surgical.

As the use of iodin has been of utmost importance in prophylaxis, so also is it of great importance in the treatment here. This type with the nervous symptoms which sometimes accompany it must be positively differentiated from exophthalmic goiter which is a very different condition and one that would be positively injured by the administration of iodin. The only positive diagnostic test is the determination of the basal metabolism. In simple colloid goiter with nervous symptoms the rate is not increased and may be diminished, for we may have a myxedema with thyroid enlargement. In exophthalmic goiter the rate is always increased and may be very high.

The most striking example of the efficacy of medical treatment in this form of goiter is in the complete myxedematous with a definite hypothyroidism and in the cretin with marked hypothyroidism.

In the treatment of 1182 pupils in the Akron, Ohio, schools with simple goiter, 873 have decreased in size while of 1048 who did not take the treatment, 145 have reduced in size.

These figures demonstrate in a forceful manner both the prophylactic and curative effects of this treatment.

As infections have shown to have a definite effect in the production of goiter we believe that all foci of infections such as infected teeth and infected tonsils should be removed.

Exophthalmic goiter is of a very different type. Other than rest and the proper dietetic and hygienic surroundings for the patient I do not believe that we have any medical treatment for this disease. The treatment of this type belongs distinctly to the roentgenologist and the surgeon, as does also the treatment of the adenomatous enlargement of the thyroid with symptoms resulting from thyrotoxicosis.

CONCLUSION

1. There are only three main types of goiter. The colloid, the adenomatous and the exophthalmic.

2. A differential diagnosis of one type from the other and a differential diagnosis of toxic goiter from conditions with similar symptoms is of the greatest importance in order that proper treatment may be instituted.

3. The basal metabolism test is a most valuable diagnostic test as well as a check on the efficacy of the treatment used.

4. Endemic or colloid goiter can be prevented by the administration of 2 grams of sodium iodide in divided doses twice a year.

5. The treatment of colloid goiter is medical and consists in the use of iodin internally and in the form of inunctions.

6. Adenomatous goiter with thyrotoxicosis and exophthalmic goiter should be treated by the roentgenologist or surgeon.

THE GOITRE PROBLEM*.

W. A. Rush, M. D., Beatrice, Nebr.

By agreement Dr. Waddell and I have divided our subject in such a way as to leave me to deal with pathology and certain non-medical treatment.

What I have to say regarding treatment will be largely along the line of radiation therapy.

Plummer has given us a simple and practical differentiation of types of goitre that is, so far as the therapist is concerned, quite sufficient. We are most highly appreciative of any, if not all simplifying formulae in the medical complex, and since this classification comes from the pen of one of the world's greatest authorities on goitre it makes its acceptance correspondingly more welcome.

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

These types are: 1. Colloidal. 2. Adenomatous. 3. Exophthalmic.

Hypothyroidism has been discussed by the essayist who preceded me and I am going to discuss only those types of thyroid disease in which there is no decrease in the basal metabolic rate.

I will attempt to take each of these types and discuss its pathology and treatment in consecutive order rather than to discuss the pathology of all three types collectively. I will further attempt a presentation of treatment in the same manner. In each the discussion of treatment will follow immediately the consideration of the pathology to be dealt with.

In this disease the etiology is either unknown or problematical and we must lean relatively more upon pathology for our therapeutic indications. Therefore, we must have some method of determining, as accurately as possible, the type of pathology present before attempting treatment if we are to adapt our treatment to pathological types.

A microscopic section would be ideal, but impossible, before starting treatment. Since this method is denied us we must, therefore, depend upon some other method. Accordingly it is necessary to bring into play every diagnostic method available. History, symptomatology, physical findings, and laboratory methods constitute the armamentarium with which we must attack this problem. A recent development in laboratory methods has been placed at our disposal, i. e., the basal metabolism determination and upon this we may lean with considerable assurance to determine the presence or absence of thyrotoxicosis and its degree.

Dr. Waddell has given you the diagnostic methods available for such determination. Therefore, it will be unnecessary for me to deal with these.

Let us say that we have, in a particular case, arrived at the conclusion that we have to deal with the colloidal type. We should then be able to visualize in our mind's eye the following pathology. The parenchyma consists of atrophic epithelium in the acini of which is a large amount of colloidal secretion. (This is the type sometimes spoken of as atrophic non-hyperplastic goitre). It is non-incapsulated, therefore, not nodular. It produces a uniform fullness of the neck and has a characteristic feel.

I wish to keep free from a discussion of symptoms, as these have been previously dealt with, yet I can not refrain from saying that occasionally these cases present nervous and cardiac symptoms simulating exophthalmic goitre and it is here that we must depend much upon the basal metabolic rate to set us right.

The pathology present contraindicates the use of irradiation or surgery. It is essentially a degenerative process needing no such destructive agents for its elimination. First of all there is no increase in the number or size of the parenchymal cells, and while there is an increase in the amount of secretion present, the active principle, thyroxin, is apparently not increased. It may even be decreased. At least it does not produce toxic manifestations. These cases are best handled by medical treatment and the exhibition of iodin has proven of great value, as has been called to our attention by Dr. Waddell. Occasionally pressure symptoms may demand surgical intervention.

Let us now consider that type of goitre that furnishes us with the greatest number of patients—adenomatous goitre. Taking up first a consideration of its pathology and attempting as before to reason on this basis the method of treatment indicated.

A rare type of adenoma is mentioned in the literature. According to information at hand only nineteen cases have been reported. This is the papillary cystic adenoma and for the purposes of this paper mere mention will suffice.

Hystologically two main forms of adenoma present. The foetal type and the adult. Such adenoma can be identified only when they are incapsulated. The foetal type presents localized areas of foetal thyroid tissue in solid masses of epithelial cells without a suggestion of an alveolar arrangement, or in other words small acini made up of small cuboidal or embryonic epithelium in spheroidal or columnar groups without luminae. They are represented by the nodular type and may undergo cystic, hyalin, hemorrhagic, or calcareous degeneration. These adenomatous areas are occasionally single but more often multiple.

Adult adenomata are encapsulated tumors in which the parenchyma has taken on adult characteristics. They consist largely of spheroidal follicles containing luminae lined with cells of the adult type. The tissue of the adult adenoma may take on all the changes that may occur in thyroid tissue outside the encapsulated tumor.

This tumor seemingly develops in middle age, but the probabilities are that its true origin dates back to early life and the enlargement is most often noticed between the ages of 15 and 20 years.

During the early stages symptoms are rare except when by their location they may produce pressure symptoms. Enormous enlargements of the thyroid may result and most of the large goitres are of this type. The same degenerative changes may occur in the adult as mentioned in the foetal type and as a result hyperthyroidism may occur.

These adenomas are most often non-toxic. In a certain per cent they may take on toxicity. (Plummer gives 23% as representing the number found in his experience). Usually the symptoms of hyperthyroidism are not found until the tumor has been present on an average of 16 years, and seldom present in a person under thirty years old.

When toxic symptoms develop, the condition of bodily discomfort and symptomatology are quite different in this long continued slowly developing hyperthyroidism than in that seen in the severer hyperthyroidism of exophthalmic goitre, and the two types may be identified. The irregular type of growth and the asymmetry produced gives us, upon inspection and palpation, a dependable clue as to its type identity. It may be cystic, soft, or hard, depending upon the degenerative changes that have occurred.

Using the pathology present as an index for treatment I believe that there is no indication for medication directed specifically upon the pathology present in the gland with any hope of success. Please remember I am not saying that there is no medical phase to these cases. Using the term, medical, in its broadest sense, including dietetic and hygienic management, and perhaps drugs for allied symptoms, I think there is doubtless always a demand for the cooperation of the internist.

There is present within the gland an excess of tissue. A pathological overgrowth of cells which may take on secretory activities manifesting itself in thyrotoxicosis. Therefore, I maintain there is a definite indication for the removal or destruction of this tissue. Two ways of accomplishing this are available. Surgery and irradiation.

Turning now to the third type or exophthalmic goitre. The normal gland presents cuboidal parenchymal cells. In hyperplastic or exophthalmic goitre there is a progressive increase in the number of acini. The parenchymal cells always show hypertrophy and hyperplasia. The cystoplasm is granular, the nuclei are enlarged and situated on one side of the cell and always takes the stain heavily. These cells approach the columnar type and the cystoplasm becomes granular as the cells become more columnar. On palpation the gland in nearly all instances will be found symmetrically enlarged and quite hard.

Now from a consideration of this pathology what may be the indications for treatment? Without further discussion I will say that there is a clear cut indication for the removal of the overgrowth of tissue or its destruction by some means. However, we must not lose sight of the fact that there is a distinct medical phase to these cases as was mentioned in the adenomas, and this demands cooperation between the internist and the surgeon or roentgenologist as the case may be.

Again, exophthalmic goitre seems to be occasionally self limited and recovery results under a variety of forms of treatment. It is sometimes necessary, especially where symptoms of greatest severity rapidly develop, to treat these cases expectantly. Neither surgery nor irradiation should be employed when it is apparent that a crisis is approaching or at hand. The internist should have absolute management during this period. The importance of remembering that these cases are occasionally self limited is that in evaluating our modus operandi it will serve as a check to over enthusiasm.

I am going to leave out of consideration all forms of treatment that are by their nature surgical. If I were to discuss surgical methods it would only be to parrot the words of others. I am not a surgeon and will, therefore, leave it to the surgeons present to discuss things surgical.

Before I proceed to discuss X ray treatment let me remark that I am assuming that at the same time the patient is being rayed he is under the care of some competent internist, be that the radiologist, or other, for supplementary treatment.

In regard to the use of radium. I have

had no personal experience with this form of radiant energy in goitre therapy. I am, therefore, not qualified to discuss its use. However, since radium gives a pure gamma ray, and we know that its biologic action will produce changes very similar to that of X ray it would seem a very desirable treatment. It has one very distinct advantage in those exceedingly nervous cases where the exhibition of so much machinery, as is necessary in the production and use of the X ray, has a rather disturbing effect on the nervous stability of the patient. Its scarcity, its expense, and its low penetrating power seem to me, perhaps the main argument against its use.

I am going to take the stand that the exhibition of X ray is indicated in every type of goitre producing toxic symptoms. From my observation of the work of others, as well as from my own experience, but chiefly of what I understand of the biologic action of the X ray, I am convinced that irradiation is definitely indicated in all thyroid pathology accompanied by thyrotoxicosis.

The biologic effect of X ray on the thyroid has been well established. I quote from the pen of Dr. Chas. A. Waters. "The shrinking effect is an easily recognized protoplasmic and nuclear shrinking. The alveolar epithelium is very much atrophied and thinned out and in places appears as a mere line. The nuclei are small and poiknotic. The colloid is present and in slightly excess amount over the normal. The appearance generally is that of a very atrophic and inactive gland. In places the protoplasm has almost vanished and it is in very many places vacuolated. The chromatin is smaller in amount. From this appearance we have reason to think that there has been a marked reduction, if not nearly complete absence of the secretory function in the cells of the thyroid gland as a result of the X ray exposure". These findings are the result of his experimental work on the thyroid glands of dogs. An endarteritis obliterans of the blood vessels of the gland result from exposure to the X ray and this enters into the cause for the results obtained.

Thyroid tissue is more susceptible to the action of X ray than other tissue, in the vicinity of the gland that comes under the action of the ray during exposure, with the exception of the skin and cervical lymphatics. The skin we must protect by careful control of dosage; the use of a hard well filtered ray, to reduce the number of dangerous alpha and beta rays, leaving us as nearly as possible a pure gamma ray.

X ray has passed through three stages: "First came the static age, when with our large static machines, we had a combination of high voltage and low amperage, hard tubes and long exposures. In other words we were using rays of the gamma type, but did not know it. It was in this period that many brilliant results were obtained, mainly empirically, which gave X ray therapy its rapid rise to fame. In the second, the coil age, we had more simple apparatus, more easily operated but a distinct drop in voltage and softer tubes. This combination coupled with the rather indiscriminate use of these machines by men untrained in roentgenology, produced many burns and bad therapeutic effects. For these reasons the expectation of cures, which had been so successfully inaugurated in the first, or static age, was not on the whole fulfilled. The third age is of fairly recent origin and was ushered in by the modern transformer and the epoch making Coolidge tube. We have now learned that it is the energy of radiation from the gamma radium and X ray which contributes most to a satisfactory end result. This period has shown the limitation of, as well as the indication for modern X ray therapy, and has placed the whole subject upon a sound basis".—(Soiland of San Francisco.)

Certain developments of rather recent date have made it possible to place radiation therapy on a more definitely scientific basis when applied to the thyroid gland. First X ray equipment has been perfected to a remarkable degree of efficiency, and a more perfect understanding of the physics of radiant energy has made it possible to use gamma radiation, cutting out undesirable rays. In addition to this we no longer guess at or even roughly estimate our dose. We can give our dosage with greater accuracy. Over irradiation with its attendant danger of hypothyroidism will occur with decreasing frequency and should not occur at all if we check our treatment with basal metabolism readings at safe intervals, discontinuing our treatment before the basal metabolism has dropped to normal.

I will conclude by saying that I am not going to quote statistics to show the results from various forms of treatment. Neither will I quote the opinions of various surgeons for and against the method. Let it suffice to say that it would be anything but natural for the surgeon, who has been so well entrenched, and who has held almost undisputed sway in goitre to concede this field, or even a part of it, to other therapy until forced to do so by a preponderance of evidence.

It is not my intention to decry surgery, nor to detract one iota from the brilliant results obtained by competent operators, but irradiation has proven its therapeutic worth and I am sure that all who have seen it used by competent men and are willing to give an unbiased opinion will concede its advantages, some of which are: It has no mortality; it is a safe procedure in competent hands; it is more economical; and it is highly efficient. As time goes on X ray will establish itself so favorably in the public mind that its use will be demanded in the type of pathology under discussion.

THE PATIENT WITH A PSYCHOSIS: ETIOLOGY, TREATMENT, AND CONCLUSIONS.*

R. H. Spradling, M. D., Head Physician and Assistant Superintendent, Lincoln State Hospital, Lincoln, Nebr.

The insane, like the poor, are always with us. They are found in all communities, and the families that do not have their mental deficient, either recent or remote, are not in the majority. People will deny that there are any mental cases among their relatives, but upon close investigation they will be found. Many people will honestly deny this statement that there are mental cases among their relatives, others who know of mental cases in their families or among their ancestors will also deny it. Many people who honestly deny a history of mental cases in their families do not know of them when they exist. It is a fact that a great majority of people who know of insanity or imbecility in their family will endeavor in every way possible to prevent the fact becoming known. In commitment papers of patients committed to hospitals for the insane, fifty to seventy-five per cent of these papers will deny, or say they know of no hereditary taint. These statements should be ignored, because, upon investigation, you will find the heredity. Approximately seventy-five to eighty per cent of all cases of insanity are inherited. Approximately from ten per cent to fifteen per cent, or eighteen per cent, depending upon the locality, are insane because of having had syphilis, resulting in a degenerative process of the central nervous system, due to the spirocheta attacking this part of the anatomy. It is estimated that two per cent of all cases of syphilis end in paresis. There is but one cause of paresis accepted at this time, and that is syphilis. There is nothing to argue as to the percentage of cases of paresis, nor is there any argument as to the etiology of this affliction. As to the etiology of the other seventy-five to eighty per cent, there is once in a while a person who will try to argue that heredity is not a factor in many cases of insanity. I will take the stand that approximately all mental cases, except paresis, are inherited. This being the case, I can think of no more important service to mankind than a forceful presentation of the truth regarding heredity. You should remember that heredity is the influence which forms character, and not environment. We should spend more of our money in improving heredity, rather than all of it, as we now do, on improving environment. This conclusion, that seventy-five to eighty per cent of the insane are insane because of heredity, is arrived at after close observation of the insane over a period of several years.

The diagnosis of the insane in all hospitals for the insane in the United States must now be uniform and conform with a classification adopted by the American Medico-Psychological Association. This classification of diagnosis has twenty-two divisions, but, you should remember that approximately ninety per cent of all insane come under seven of these classifications. While different hospitals vary in the diagnosis of the insane, the difference of percentage is not startling. Taking into consideration the fact that approximately all insane, other than cases of paresis, inherit their psychosis, it is not so important as to the diagnostic classification, but it is of importance to know that they have a psychosis. The dementia praecox patients lead the list with about thirty-five per cent of all the insane. I can not imagine how any psychologist can other than contend that all dementia praecox patients inherit their psychosis. Approximately twenty-five per cent of the insane are classed as manic-depressive patients. These in every instance inherit their psychosis. Approximately seven per cent of the insane are of the classification known as senile psychosis. Any human being, inheriting a normal mentality, will never be insane and classed as a senile psychosis. Approximately four per cent of the insane are paranoids, and they inherit their psychosis. Approximately eleven per cent of the patients in hospitals for the insane in Nebraska are imbeciles, and no normal person would say that they did not inherit their deficient mentality. Approximately eight per cent of the insane are of the classification known as epileptic psychosis. There is some question as to the percentage of the epileptics who inherit their abnormal nervous make-up, but nearly all physicians will agree that epilepsy is inherited. Approximately from ten to eighteen per cent of the insane, as has been stated, are cases of paresis. The great percentage of the cases of paresis are acquired and should be prevented. It is my prediction that in future years the cases of paresis in hospitals will be greatly reduced because of the activity of the medical profession in different states in their effort to put on record and treat all cases of syphilis. Paresis is caused by the patient in most cases not knowing that he or she had the infection and consequently not receiving any treatment, or because of the physician not giving sufficient treatment, or possibly some cases not receiving proper treatment.. I wish to state here that of all the deaths of male patients in the Lincoln State Hospital for the Insane during the past year, forty-six per cent of them were due to paresis. There are some cases of insanity who do not inherit their psychosis other than the paretic patient, but the percentage is so low that it need not be considered to any extent. For instance a psychosis due to cerebral arteriosclerosis is probably not inherited, but only six-tenths of one per cent are of this classification. The traumatic psychosis is not inherited, but only five-tenths of one per cent are due to injury. Alcoholic psychosis is probably not inherited, but only five-tenths of one per cent are of this classification in Nebraska. So, not more than two per cent can positively be classed as not hereditary, other than the paretic patients. Emphasis is given to these statements because of the laity being continually led to believe otherwise by articles in daily papers and magazines. For instance, the numerous public statements of Dr. H. A. Cotton of the New Jersey State Hospital at Trenton and re-echoed by Dr. Copeland, formerly Commissioner of Health of New York City. Dr. Copeland quotes Dr. Cotton and has printed what I will call flagrantly untrue and criminal statements. To quote him, he says that heredity that used to be counted as a vital factor in the production of insanity should now be disregarded. I will make a few more quotations in this article that he had printed so that you may get some idea of what some physicians are liable to write. He says that under the normal conduct of asylums that there may be expected thirty-seven per cent of cures of the insane. He says that under Dr. Cotton's system of running a hospital for the insane there are eighty-five per cent of cures. He has made other statements that are probably about as nearly correct as these I have quoted, but this is enough to present with this paper. I wish to impress upon you the fact that insanity is a chronic and an organic affliction. Approximately no insane are cured, the statements of Dr. Cotton to the contrary, notwithstanding. Not more than one to four per cent in any case, by operative or other means can be classed as cured. Having had the work for nearly five years of stating in the parole book the condition of all patients leaving the Lincoln State Hospital who were paroled, escaped or transferred to other institutions, will state that not one patient has been marked as cured in all that time. You should remember that these patients are intimately known to us and in no case could we say that they were cured.

---

*Read before the Lancaster County Medical Society, Saturday evening, April 7, 1923.

The insane are practically the same the world over, the same in Nebraska as in New Jersey. People inherit their physical and mental make-up. This is known by most people and has been known for generations past. Every human life originates from a single fertilized germ cell. This cell contains elements which determine what manner of man or woman that cell will ultimately become. This cell contains elements which determine whether the person is to have blue eyes, black hair, the contour of the face, head and body. It also determines whether or not the person will be normal mentally. The fertilized germ cell from imbecile parents will surely result in children who are mental deficients. The fertilized germ cell from dementia praecox or manic-depressive patients will result in children, who, before they leave this sphere will probably be in a hospital for the insane. There are thousands of persons who inherit a defective mentality who will appear to go through life in a very good condition because their journey through life is such that they do not meet with serious troubles or afflictions, such as disappointment in love, financial reverses, etc. They have not had the **active factor** that causes them to become insane, and yet they may have inherited a defective mentality, or, in other words, an abnormal central nervous system. To anyone who is inclined to argue against the heredity of the insane, let us ask him how he accounts for the numerous cases of practically whole families being insane, and this is very common in all hospitals for the insane. Find me the normal person who would enjoy the possibility of his or her children marrying an imbecile, a dementia praecox, or a manic-depressive person. A patient has just been committed to our hospital whose father was in the penitentiary. He has three sisters who are in the feebleminded institute. He, himself, has been in the penitentiary three times for committing rape and has just now, at so late a date, been adjudged insane because of trying to entice a five year old girl into a vacant house with intent to commit rape. These acts he acknowledges in every instance. Is this man's mentality caused by a focal infection in his teeth or some other part of his anatomy? Infected teeth, love affairs, reverses financially, masturbation, influenza, child-birth, the climacteric, and many other so-called causes of insanity never cause a person to become insane. They may be an active factor in bringing about the psychosis in remote instances, but you should remember that the person who becomes insane inherits an abnormal mentality and in seventy-five to eighty per cent of all cases of insanity there is no other cause. A normal person will never become insane because of financial reverses, love affairs, influenza, pus cavities in his teeth, etc. No normal person becomes insane because of frightful experiences in battle. You hear and read of the cases of insanity caused by shell-shock. There is no such condition as shell-shock, but there is the condition that should be called shell-concussion. It has been proven in war-front hospitals that shell-concussion does not cause insanity, because all cases of shell-concussion die promptly, or the patient recovers in several days time. Shell-concussion causes multiple small hemorrhages throughout the cerebrum and these hemorrhages are so profuse as to cause death, or so limited as to soon be absorbed, resulting in recovery.

The treatment of the insane covers too much ground to be given specifically in this paper. You should remember that there is a vast difference in the treatment of their physical condition and the treatment of their mentality. The great percentage of all treatment of the insane is of their physical afflictions. As far as securing a cure of the mental condition, treatment is of no avail in approximately all cases. Improvement mentally in many cases is secured by hydrotherapy, psychotherapy, surgery, removal of pus cavities and of focal infections, but there are no cures. Again, I must insist that no person becomes insane because of pus teeth, focal infections, or other so-called causes that have been mentioned. These mentioned causes are but active factors in the production of insanity in a few cases only; and in no case does a person inheriting a normal mentality become insane because of them. In some cases good results are obtained with hydrotherapy by its eliminating or sedative action as is desired by the physician. Medicine is uppermost in the treatment of the insane for their physical conditions as is the case with normal persons, mentally. You hear and read much regarding the necessity of having a dentist in hospitals for the insane or state institutions. As a humanitarian act the dentist should be supplied by the state and no argument other than economy can be advanced against it. Many of the insane have teeth that need attention badly and the state is negligent because of not supplying this want. But, as usual in writing arguments, many will declare that the dentist is desired because it will increase the percentage of cures of the insane. Such is not true and in no instance will you get a cure. The treatment of the teeth by a dentist will improve the physical condition of the patient by making it possible for him to take proper food and masticate it sufficiently. The life of the paretic patient after coming to a state hospital is from two to three years, but some die in a few days or weeks or months. In some cases by intensive treatment the course of the degenerative process is arrested and the patient will go along in about the same condition mentally and physically for many years. We find that mercury and the iodides is the preferred treatment of paretics, and results are obtained in many instances. The arsenicals, salvarsan, neo-salvarsan, neoarsphenamine, we find are not indicated in advanced or active cases of paresis. In many cases they act detrimentally and the patient will show a rapid decline and die. In hardly any case do we find improvement. The seemingly miraculous results obtained in lues of other parts of the anatomy by these drugs is not obtained in paresis. With epileptic patients the diet is restricted and thorough elimination is very important. Luminal sodium and the bromides are the drugs mostly used. We believe that luminal sodium is preferred to the bromides and splendid results are obtained in-so-far as it reduces the frequency of the convulsions, and there are no bad effects of the continued use of the drug, as is obtained by the use of bromides. We have observed cases of surgery such as removal of thyroids and ovaries and trephining but no results are obtained in most instances. Good results in trephining of insane patients can hardly be expected because any psychosis caused by an injury is too remote to get results by removing any pressure. In a nut shell, the treatment of a psychosis is prophylactic, prevent syphilis in-so-far as this is possible, and then see that all cases of syphilis receive proper and sufficient treatment, and you will eliminate paresis as a disease to a great extent. The other eighty per cent of the insane are inherited. Prevent the reproduction of mental deficients and the world will be on the right road. It will be easy to greatly reduce the cases of paresis in the next generation, but I am pessimistic as to getting results in preventing the reproduction of mental deficients. There is no record thus far of any people on the face of this earth who have had laws to accomplish this result. For countless centuries the mental deficients have reproduced. As a result the human race as a whole is deficient physically and mentally. When you stop to think of the situation, how could it be otherwise. It has been estimated by observant psychologists that twenty per cent of the human race are morons. This is no exaggeration of the percentage. The great bulk of these people are outside of institutions and intermarry and reproduce. Scores in institutions go home and reproduce their kind. It is common knowledge to all people that wonderful results are obtained by attempting to improve the stock of domestic animals. When the word "eugenics" is used before a large percentage of humanity it creates a furore. Then it is that you begin to realize that the human race is deficient. Certain classes of people will say it is against the will and teachings of God that the mental deficients be not allowed to reproduce. There are no laws in all the world to get the results mentioned, of inhibiting the reproduction of mental deficients. It is true, a few states in our own country have inefficient laws along this line, but even these inefficient laws are not enforced. Dr. Elizabeth B. Thelberg of Vassar, Chairman of the National Council of Women, in speeches and written articles emphasizes the importance of people knowing the very large percentage of insanity which is due to heredity. By extensive statistics she shows that fifty-nine per cent of the insane have on record the fact that there is insanity on either the father's or mother's side, or both. If there is this large a percentage on record, there is surely more than fifteen or twenty per cent of cases with no record. This goes to verify my previous statement, that seventy-five to eighty per cent of the insane, are insane because of heredity. Do not fail to compare the statement of Dr. Elizabeth Thelberg with the statement of the politician and United States Senator, Dr. Copeland, who has scattered broadcast over the country the statement that now since he has talked with Dr. H. A. Cotton of Trenton, New Jersey, they find that heredity need not now be considered as a factor in the production of insanity. Professor Louis M. Terman, head of the psychological department of Stanford University, and compiler of intelligence tests and statistics, says that the average of intelligence of the people is decreasing. How can we expect otherwise, when the mental deficient reproduces generation after generation. Dr. Terman says that "geniuses" of the future are sure to be fewer. In the Nebraska Hospital for the Insane eighty per cent of the patients are either foreign born or of foreign parentage. Here, again, is food for your gray cells to ponder over. This is a sad commentary on the efficiency of our laws and especially on our immigration authorities during the last generation. There is no doubt, as Dr. Terman has stated, that the average of intelligence is on the decrease, and there is no doubt that the average of intelligence is rapidly on the decrease in southeast Nebraska. The human race is sadly in need of the slogan "Quality not quantity." The continued talk about race suicide is slush, and there is no thought back of it. China is a good example of no race suicide. It would be a great blessing to our country if, during the next century, we could show no increase in population, but that at the same time we would use every effort to improve the quality of the one hundred million people we already have. You ask how that is to be accomplished. As I have already stated, I am somewhat of a pessimist in this regard. But, first, there must be a campaign of education to educate the people to the truth, to combat statements of our Cottons and Copelands and numerous others. The physician must be the one to head this propaganda of intelligence. Steadfastly spread the fact that to improve our race the mental deficients must not be allowed to reproduce. How are we to accomplish this result? First, educate the people up to the actual facts. Educate them to the fact that one-fourth of the American people are what are classed as "pretty bright," that three-fourths of the American people are what are classed as "pretty dull", and that the future of our country depends solely on whether the bright one-fourth or the dull three-fourths produce the larger families for citizens of the future. Educate them to the fact that it is necessary that the mental deficients be segregated or sterilized. It will be necessary to give mental experts the authority and power to say as to whether the mental deficients in a community are to come within the provisions of laws that might be passed. If this line of procedure is followed, generation after generation, in a few centuries we would have a super-race as compared with the degenerated race that now exists.

INTUSSUSCEPTION IN CHILDREN.*

Howard B. Hamilton, M. D., Omaha, Nebr.

This condition constitutes one of the emergencies of pediatric practice. It accounts for about three-fourths of the cases of acute intestinal obstruction in young children.

It is of unproven etiology; its most favorite age is under one year, rarely under three months, but it has been seen as early as the second day. No satisfactory explanation of the etiology has as yet been suggested. Perverted peristalsis, or irregular peristalsis, has been thought to be a causative factor but this seems to be inadequate explanation. Most of the cases seen by the writer have been infants who previously had normal gastro-intestinal tracts. Floyd Clark(1) in a recent paper quotes Perrin and Lindsay as believing that the majority of intussusceptions are caused by inflammatory swellings of lymphoid tissue about the ileocecal valve. This would not explain those in other locations. Hussey(2) mentions as predisposing anatomical factors, "First; the greater mobility of the cecum and ileum due to a longer mesenteric attachment which allows the ileum to fall into a nearly direct line with the long axis of the cecum and colon. Second; a large ileocecal valve which permits an abnormally easy passage of the ileum through the ileocecal valve. Third; the pronounced thinness of the intestinal walls."

Injuries, diarrheal disease, constipation, abnormal conditions of Meckel's diverticulum and "bands" have been reported as causative factors in various instances, but no cause, or combination of causes, has been a constant finding.

This condition presents a rather typical group of symptoms with an orderly sequence of events, which should in the most of cases permit of an early diagnosis. Pain is usually noted as the first symptom. It is often severe and manifestly of abdominal origin. It may cause loud outcries, or only grunting with the intestinal contractions. Vomiting soon follows, and is likely to occur when the pain is most severe. "Shock" or "prostration" is emphasized as being present by practically all writers. The following description taken from Griffith(3) is typical. "The face is pinched, the eyes sunken, the pulse feeble and rapid, the urine scanty, the temperature normal or below it." The same description applies quite well to "dehydration" due to any other source. It is not suggested that "water loss" accounts for all the shock. It is contended that it accounts for a part which is amenable to treatment. Abdominal tumor is present in the majority of cases. It may at first be palpable only when the intestinal muscle contracts. When the apex of the intussusception is palpable per rectum it feels much like a slightly dilated cervix. Bleeding from the rectum frequently occurs, but may be absent. A chronic intussusception is mentioned which is diagnosed by palpating a tumor which is alternately soft and less soft. This difference in the apparent density of the tumor is also observed in acute cases.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

DIFFERENTIAL DIAGNOSIS

INFECTIOUS DIARRHEA. Common to both conditions is acute onset with vomiting, bloody stools, abdominal pain, and toxemia. Abdominal tumor, and blood unmixed with feces are not present in infectious diarrhea. If there is suspicion of intussusception, rectal examination should not be omitted in any case. Usually in diarrhea there is fever early, there is great frequency of the stools, and there is no tumor.

APPENDICITIS is also manifested by abdominal pain and a certain amount of constipation is usually present. Vomiting is a fairly constant symptom. Fever is soon present, however. A tumor may be present in the right iliac fossa, instead of the peculiar emptiness in that region as in intussusception. There is no sausage shaped tumor with varying density, no blood in the stool, no cervix like tumor palpable per rectum.

INTESTINAL TETANY. The writer has recently seen a case of intestinal tetany in which intussusception was suggested on account of apparent severe pain, but there were other evidences of spasmophilia present. There was no vomiting, the bowel movements were normal, no blood in the stool and no tumor present.

TUBERCULOUS PERITONITIS is not frequently of such acute onset as intussusception, but the writer calls to mind a patient seen in the service of Dr. A. K. Stone of Harvard University, in whom after an injury, tuberculous peritonitis developed so rapidly that only a laparotomy revealed the diagnosis. The classical symptoms of intussusception, however, are usually lacking.

SCURVY, which occurs at a similar age, when associated with hemorrhage into the intestinal wall or into the mesentery, may simulate intussusception, but the presence of feces mixed with blood and other evidences of scorbutus should help in differentiation.

HENOCH'S PURPURA, with blood into the lumen or wall of the intestine, may suggest intussusception, but there are usually other evidences of purpura elsewhere. Intussusception is, however, sometimes associated with purpura. The X ray might in this event be of considerable help in diagnosis.

REPORT OF CASES

Case 1. Baby V., age 10 months. A bottle fed baby, well nourished, of good color, normal weight. Patient seen about 10 A. M. giving the following history: About midnight began to have abdominal pains which were intermittent in character. Within a short time this was followed by vomiting. There were intervals between the pains of about 5 minutes. There had been no bowel movement and no blood from the rectum. Patient was moderately prostrated and not seriously dehydrated, had retracted abdomen and normal temperature. A tumor was palpable above the umbilicus and in the region of the transverse colon. No tumor was palpable by rectal examination. Patient was operated upon by Dr. B. B. Davis at 11:30 A. M. The operation confirmed the diagnosis of intussusception of the ileocecal variety, about six inches in length. The patient made an uninterrupted recovery, and in a report of April, 1923, has had no further trouble.

Case II. Baby P., age 15 months. A well nourished child which was seen at 7 o'clock in the evening, with the history of having been given a slight laxative in the morning. At noon baby began to have abdominal pains, intermittent in character, and associated with vomiting. A sausage shaped tumor was easily palpable in the left side of the abdomen. On rectal examination tip of the tumor, much resembling a slightly dilated cervix, was felt. Examination was followed by a profuse discharge of sero-sanguineous fluid from the rectum almost resembling that from a placenta previa. There was a moderate degree of collapse and only a moderate degree of dehydration. Immediate operation by Dr. John Nilsson confirmed the diagnosis and revealed an intussusception of the ileocolic variety. A band across the cecum, which in the judgment of the operator was a factor in bringing about the condition, was severed. The appendix, which was dark and congested, was removed. Patient recovered without further complication.

Case III. Baby S., age 2 years. Well nourished. Patient was seen at 9 P. M. and gave a history of intermittent abdominal pain which had existed for 12 hours, associated with vomiting and bloody stools. Temperature 100°, a moderate degree of prostration and dehydration. At first examination a tumor in the upper abdomen was definitely palpable only at periods corresponding to peristaltic contractions which were apparently synchronous with the pain. This tumor at first felt in the upper middle abdomen, at midnight, just before the operation, was not only palpable, but visible, in the left iliac fossa. Operation was done 15 hours after onset of symptoms, and patient made an uneventful recovery. The mother recently reported the child has had no further difficulty.

These three patients were all well nourished, and none were having any apparent gastro-intestinal disturbance at time of onset of trouble. Two of them were above the most common age for the development of intussusception. They all had pain, vomiting and palpable tumor. All were moderately prostrated. None were seriously dehydrated. Case I had no blood in the stool. In case II, the tumor was palpable by rectum. In none was there distension of the abdomen. All were operated upon within 15 hours of onset of symptoms, all were operated upon before serious dehydration had taken place. Surgical aid was conveniently at hand, and for that reason none were subjected to hydrostatic or air pressure per rectum. The favorable results were due entirely to the fact that they all presented a typical symptom complex which permitted of an early diagnosis and prompt operative treatment.

It seems reasonable to suggest that in the management of intussusception that a careful consideration be made of the body as a whole. Water loss of itself can produce a condition which resembles very closely that which is called "toxemia" or "surgical shock". A child who for a period of from 12 to 100 hours has been vomiting practically all fluids which are taken into the stomach is dehydrated to a severe degree. It should be remembered that a small body cannot stand loss of water to the same degree as an adult. A child losing water by a severe diarrhea or deprived of it by prolonged and frequent vomiting, will present a picture in some aspects much similar to that seen in obstruction of the bowels. It is very questionable if the evident toxemia is due to absorption of toxic products from the intestinal tract. No such products have been isolated in other gastrointestinal conditions. A picture very similar to "shock" or "toxemia" has been produced by placing animals in a warm place and depriving them of fluids.

Many physicians are familiar with the good results brought about by the administration of fluids in severe dehydration due to other causes, and the writer can see no good reason why in a condition of this kind more or less equally good results might not be expected. It is not difficult at operation to leave in the peritoneal cavity some normal salt or Ringer's solution. Fluids can be given by mouth soon after operation. They can be given before, during, or after operation, intravenously or subcutaneously. It would be unreasonable to forget the importance of the severe pain, the incarcerated bowel, with disturbance of the nervous, lymphatic and circulatory supply of the intestines and mesentery. These can be relieved only by the reduction of the intussusception. The water loss can meanwhile be receiving the attention of the attendants. These measures are effective in dehydration due to other causes if they have not been existent for too long a time.

SUMMARY

1st. Acute intussusception is one of the emergencies of pediatric practice with usually a definite sequence of events which permits of an early diagnosis.

2nd. If surgical help is available an immediate laparotomy is indicated. Only where surgical help is unavailable is the use of air or water pressure justifiable.

3rd. Dehydration is one of the important considerations and must contribute enormously to the high mortality. It is amenable to treatment.

REFERENCES

1. Nebr. State Medical Journal, April 1923, p. 142.
2. Boston Medical Surgical Journal, Nov. 10, 1921.
3. Diseases of Infants & Children, p. 787.

DISCUSSION

J. C. IWERSEN, M. D. Omaha: I feel this paper should be discussed because Dr. Hamilton always produces something.

As to diagnosis, how many of us do a rectal examination in acute intestinal infectious diseases of children? I think that point is well brought out. We neglect to examine the rectum.

Another thing is dehydration. This is the most important part of his paper. When we see a child with pinched expression and uninterrupted breathing, a condition we often see in acidosis, there is no difficulty in giving fluids. You can give them as high as 50 or 100 cc. of normal salt solution into the peritoneum twice a day.

As to the treatment, if you are close to a surgeon, there is only one thing and that is surgery. I have had two cases in general practice in the country. One I was able to reduce with water, and the other I could not do a thing with water. As my surgical ability is not good, I was afraid to tackle an operation. I used a seidlitz powder, injected one part and then the other, held my thumb over the rectum, and the intussusception was reduced.

B. F. LORANCE, M. D., Auburn: I think this paper of Dr. Hamilton's is one that is entitled to very careful consideration. This is a trouble we see rarely. In a practice of thirty years I have seen two cases. The necessity of making a diagnosis on the spot and doing the right thing makes it a very important condition to meet with.

The doctor said the diagnosis is easy. So it is, if we approach the case, as we should approach every case—absolutely on the alert, with our eyes open, looking for every possibility that can exist. But so often we do not do that. If we fail to see the condition at our first visit we lose our patient. Approaching one of these cases, one cannot fail to understand, if he looks carefully, that he is viewing a patient desperately sick; the facial expression, the rolling of the head from side to side, the cry of pain, the persistent vomiting with no bowel movements all make up a clear picture. Ask the mother if the baby's bowels are moving and she will say "Yes." But do not take the mother's word; look yourself and you will see a little spot of blood on the napkin, nothing more. That is a very important point. Having noted these serious symptoms, the case then demands the most careful examination. There is one symptom which the doctor did not mention, which is usually present, and which I noticed in both cases I had—the anus is patulous; the fingers are easily introduced, and the invaginated bowel can be felt, as the doctor said, in many cases.

We sometimes get fooled on these cases. One of the cases I had was in the summer time and we were having a large number of babies sick with ileo-colitis, with bloody bowel movements. The mother thought, as I at first thought, that her baby was sick the same as all the other babies in the neighborhood. These points differentiate the two cases: The babies with ileo-colitis, as a rule do not vomit; the baby with intussusception always vomits; those with ileo-colitis have bowel movements consisting of blood and fecal matter; the baby with intussusception passes blood only.

What is the thing to be done? The doctor says, "Always surgery." Certainly always surgery if the condition has existed more than a few hours, for after a short time adhesions will have taken place; if you then attempt replacement by forcible inflation you will rupture the bowel.

I once saw a typical case of two hours' duration. By filling the rectum with water and holding the little patient head downward the bowel slipped back and all was well. The condition did not return; if it had recurred, of course, surgery at once would have been the only thing.

H. B. HAMILTON, M. D., Omaha: I think our cases of intussusception are not always easy of diagnosis. The cases which I happened to have have been rather easy. One of them I believe I might have "slipped over on" had I not for quite a little bit kept examining the abdomen of that baby. As the pains would come I could feel the tumor under the hand. It would get harder, and then would relax and be less hard. I believe I have not noticed that mentioned in literature in connection with acute cases, but I have seen it mentioned in connection with chronic cases. I am certain I found it in that one acute case.

I know it is possible sometimes to relieve by injections of water or by air or gas, but Dr. Morse in his case history said most surely it should be operated upon, because if you attempt to reduce it, you may partly reduce it only and it is almost sure to recur. The doctor said he reduced one which was permanent. The danger, I believe, is in partial reduction and the patient going on until it is past operation.

The point I wanted to make was the matter of water loss. We will admit the tumor must be reduced, but it is only a short time since we have learned the importance of water loss in the baby. Absolutely they can not stand the loss of water as does an older individual. It would be of some help in our management of these cases to look after that water loss. It is not a difficult thing, although surgery is not at hand. If the baby must be moved to a hospital, one can inject fluid under the skin. You do not need to have distilled water other than you can get from the druggist. Make six-tenths of one per cent of salt solution and inject 50 to 150 cc. under the skin. If it makes a difference between saving and losing the baby, it would make all the difference in the world.

It seems to me in a condition of this kind in a baby there is a peculiar indication for the administration of fluids. I am unable to see why it is not of particular advantage in this condition. We know from our experiments in other lines that a child can not stand water loss, and the injection of fluids either subcutaneously, or intravenously or intraperitoneally picks them up. If we can tide them over a few hours it may make the difference between losing the baby and its recovery.

TRANSFUSION OF BLOOD FOR HEMORRHAGE AND SHOCK.*

George L. Pinney, B. S., M. D., Hastings, Nebr.

Transfusion of blood has often been adopted in the past, but with so little success and so many mishaps that it was put aside in favor of infusion of saline solution. Without the tests as to compatibility, failure and disaster frequently followed. During recent years this procedure has come to the front again and with its advent have come many new indications for its usage. It has been advocated more and more until now it is a popular therapeutic measure.

Transfusion was first mentioned in history as far back as 1492 when an effort was made to save the life of Pope Innocent VIII. On up through the years the name of many prominent men are associated with this subject. The greatest strides have been made since 1900 with the coming of Crile's direct method, the Kimpton-Brown method, the citrate method and many others. Along with these various methods we find a great controversy taking place as to which is the most beneficial to the patient, the transfusing of whole unmodified blood or blood to which has been added some anti-coagulent. Although this question has not been fully decided, the general consensus of opinion is that the introduction of unaltered fresh blood is more beneficial to the patient.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

With the varied indications for transfusion there are probably no two that offer more gratifying results than in shock and hemorrhage. These two conditions are ever confronting us and the surgeon above all should be prepared to meet these emergencies when they arise. In the hospitals of the larger cities we find surgeons who are employing this method of treatment each day, but it is surprising to know that in a vast majority of the smaller hospitals in the less thickly populated areas, one very seldom finds transfusion used as a means of combating hemorrhage and shock. Many have no conception of the present day methods of determining the compatibility of blood and they do not realize what great benefits may be derived from such a procedure. Preparedness is a means of prevention and if more surgeons were prepared to do transfusions it is reasonable to believe that a large number of lives could be saved each year that have hitherto been lost because of lack of efficiency in giving our patients the maximum opportunity for recovery. No doubt each day some individual loses his life from loss of blood or shock because he first must be transported over a long distance to a hospital where he may receive the proper attention. Oftentimes the hours or minutes required to transport the patient are lost and upon arriving at the destination there is no need to offer treatment. If these long journeys that patients are forced to undergo could be greatly reduced by having more centers throughout the country where aid could be given promptly would we not help materially in reducing the danger of loss of life from hemorrhage and shock?

Where these two conditions exist and one is confronted with the necessity of performing some minor operations, transfusion not only aids in lessening the severity of the condition but also decreases the operative risk to the patient. Many surgeons are now offering preoperative transfusions preparatory to some major operation and often convert a poor operative risk into a fair or comparatively good one.

Shock may be described as a condition of depression of the vital activities of the system associated with a marked fall in blood pressure resulting from injuries. Shock may be primary or secondary according to its immediate or late relation in time with the causative lesion. In more severe cases of shock the picture presented is one of prostration,—weak, irregular, extremely rapid, or even imperceptible pulse. There is a marked pallor, the brow is covered with cold perspiration, respirations are slow and shallow and the temperature is usually sub-normal. If concealed hemorrhage accompanies this condition the symptoms are very similar and the diagnosis is often difficult to determine. However, close observation of the cellular elements of the blood will reveal a gradual decrease in the red cells and a slowly increasing white count.

Where a patient is suffering from a loss of a large quantity of blood, after having controlled the bleeding point the question arises as to whether or not a transfusion should be done. Each case presents a problem in itself, and no absolute rule can be laid down. Experience can be our only guide. However, a good working rule to follow is to transfuse in all cases where the systolic pressure has fallen to a level of 80 millimeters of mercury. With a systolic pressure below 70 millimeters life is hardly possible.

If in these severe hemorrhages, transfusion is not available, naturally, saline solution intravenously is indicated, but many patients are waterlogged by salt solution and the necessary results are not obtained, because the already deprived tissues quickly take up the saline from the vessels and leave the circulatory system depleted. One must always consider the possibility of overloading the heart and causing an acute dilatation by using great quantities of saline intravenously.

It has been shown conclusively that blood alone can raise the blood pressure and sustain it. Not only does it bring about this rise in pressure, but it supplies the necessary erythrocytes that are so essential in carrying out the process of oxygenation and these no doubt begin immediately to function after being transferred. Thus the patient's recovery is hastened for while the hemopoietic system responds rapidly, it sometimes requires many weeks for the individual to regain the lost cellular elements, and during this time there is a marked degree of weakness and lowered vitality which predisposes to disease of some type or other. It has been shown that transfusion not only replaces the lost blood elements, but it has a stimulating effect upon the blood forming organs which brings about an additional increase in the red cells. Further work has shown that transfused corpuscles remain as long as thirty days in the circulatory system of the recipient.

The chief causes of failure in the past lay in the unrecognized fact that the blood of one individual may be totally incompatible with that of another, and before a transfusion is undertaken careful tests must be made to determine this point. The incompatibility may arise in two directions. First, the red cells of the recipient may be agglutinated by substances in the plasma of the donor and second, hemolysis may occur, the corpuscles, thereby being dissolved. The plasma of the donor has no effect upon the cells of the recipient as the latter are protected by their own plasma and the plasma of the donor is so rapidly diluted in the vessels of the recipient that its effects are negligible. It is now a well established fact that all individuals fall into one of the four groups as to agglutination and hemolysis. Group one serum does not agglutinate the corpuscles of any of the other groups, and for this reason they may receive blood from any individual and are known as universal recipients. The corpuscles of group one are agglutinated by each of the other sera. The serum of group two agglutinates the corpuscles of groups one and three, while the corpuscles of group two are agglutinated by the serum of groups three and four.

The serum of group three agglutinates the corpuscles of groups one and two while the corpuscles of group three are agglutinated by the serum of group two and four. Group four serum agglutinates the corpuscles of groups one, two and three, but the corpuscles of group four are not agglutinated by any serum and for this reason individuals in group four are termed universal donors. With these facts as a basis we find that when a known two and three serum are mixed with the corpuscles of an unknown group each group offers a different picture. For example, corpuscles of group one are agglutinated by both the two and three serum. Group two corpuscles are not agglutinated by group 2 serum, but are agglutinated by the 3 serum. Group three serum does not agglutinate its own corpuscles, but does agglutinate the corpuscles of group two. The corpuscles of group four as stated before are not agglutinated by either the two or three serum. Thus we have a means of definitely determining the group of any unknown corpuscles. This test can be carried out in a very few minutes. All that is necessary is to have on hand a known group two and three serum which is kept in small capillary tubes. A drop of each is placed at one end of a glass slide and a small drop of unknown corpuscles suspended in physiological saline solution is mixed with the serum. In a short time slumping of the corpuscle, if it occurs, is rapidly visible and soon becomes well marked. Hemolysis need not be specially tested for, as where there is no agglutination it does not occur.

Where transfusions are being done frequently, it is well to have at hand several individuals who are willing to act as donors in emergency cases. These individuals should be previously grouped and each should undergo a careful examination to determine whether or not they are fit subjects to act as donors. The best results are obtained and fewer reactions follow where donor and recipient are of the same group and no transfusion should ever be undertaken without first grouping both donor and recipient.

A method that we have employed in the past and one which has proven successful in my personal experience of 202 cases, is a direct method using unmodified blood which is transfused by means of syringes with cannulas. These cannulas are of two sets, and two cannulas to a set, each telescopes within the other. The inner cannula is practically a hollow needle 20 gauge, with one end ground to a fine point and a short bevel. This hollow needle fits snugly into the outer cannula, the proximal end of which is capped with a stationary thumbscrew cap, with a receiver to fit the syringe used. All the apparatus can be boiled to sterilize.

In carrying out the transfusion, suitable veins are selected in the arms of both donor and recipient. One operator manages the syringe of the donor, another of the recipient, and an assistant stands between them in close proximity. Donor and recipient are placed in recumbent position. A tourniquet is placed in position, and the skin is sterilized with alcohol. The cannula is then placed in position almost parallel to the vein with the thumb on the thumbscrew cap of the inner cannula.

The skin is then punctured and the cannula is forced into the vein.

After the outer cannula has entered vein, the inner one is withdrawn about a quarter inch which prevents the vessel being injured by the needle after the vein is entered. The outer cannula is then forced further in to the desired length, usually an inch. The inner cannula is then withdrawn entirely, and if the vessel has been successfully entered, blood will flow through the cannula. When the first drop appears, a syringe containing warm saline solution is immediately attached and a very slow flow of saline is maintained through cannula, thereby preventing the escape of blood. A cannula is then inserted into the vein of the donor in like manner, and a syringe containing warm saline is attached to prevent the loss of blood, and an empty syringe is attached and blood is withdrawn from the donor, and when full the assistant passes it to the operator of the recipient, who removes its saline syringe, attaches the syringe containing the blood and evacuates the contents gently but speedily into the vein. One syringeful is followed by another, the blood being withdrawn to the same speed as evacuated, until the desired quantity of blood has been transfused.

In conclusion I wish to quote Doctor Allen B. Kanavel, with whom much of my experience has been:

"We use and have used in a considerable number of cases both the direct and indirect methods. Originally we had considerable trouble with temperature and chills following the use of the indirect method, but since ceasing to beat the blood violently on entering the solution we have had little difficulty in this regard, and from a clinical standpoint the simplicity of the citrate method associated with the simplicity of its use in patients who are very ill and can be moved only with difficulty, we find ourselves using more and more the citrate method, although in case other factors are equal, I believe that the direct method is superior. We have come to use transfusion not only to restore patients who have gone into shock following hemorrhage, but as a prophylactic in those patients in whom we fear shock might be present due to operative procedure. We would use it, of course, in all cases where hemorrhage has been suffered. I am quite sure that yearly we save a considerable number of patients undergoing operative procedures by this preliminary use or associated use of blood transfusion.

"I think an added word of warning is still necessary in regard to the typing of blood between the donor and recipient. While the classification as ordinarily used in a large percentage of cases is satisfactory, we still feel that a preliminary injection of a few c. c. should be made to note if anaphylactic shock takes place, and then doing the transfusion. Where possible we make a direct test of the blood of the two individuals as a further safeguard. It has happened in two instances that we have had patients who have had moderate anaphylactic shock. No deaths have occurred, fortunately, but the responsibility is a grave one and every precaution should be taken to prevent this complication."

DISCUSSION

M. G. WOHL, M. D., Omaha: The subject of blood transfusion is a fascinating one. If you see a patient in whom some operative nasal work has been done, as I now recall such an instance of a hemophiliac, in which available means had failed to check the hemorrhage, and when you transfuse him and the hemorrhage has stopped, there is hardly any need for an argument to convince you of the value of blood transfusion—having witnessed such a scene you become converted to it. The transfused blood not only serves as Dr. Pinney well said, to replace the volume of lost blood, but it does more than that; it stimulates the formation of those factors—call it blood platelets or fibrinogen or whatnot that are vital in the process of blood clotting. The value of blood transfusion in hemorrhage of the new born, is based upon the same principle. Blood transfusion in surgical conditions that are accompanied by a great fall of blood pressure is likewise of extreme benefit; the surgeon has been using in such instances his salt solution, but he soon realized its futility, for the solution has oozed out through the vessel walls and the pressure was soon at the same level as when he started out. Fresh blood, however, being in a colloidal state, will remain within the lumina of the blood vessels and keep up its volume, thus raising the pressure. Our interest in blood transfusion dates back to 1917, when every one of us was chiefly concerned as to how to save more lives on the battlefield. It is there that blood transfusion has received its stimulus as never before. It proved of practical value, as every surgeon from the front will tell you. Blood transfusion when brought back to civil practice, will, in selected cases, yield equally good results. I recall a patient who had a fibroid of the uterus. She had bled almost white; surgical interference was out of the question; blood transfusion has, so to say, rejuvenated this patient, has carried her through the critical period. At a later date surgery was employed which was followed by another transfusion; and patient made a complete recovery.

I well remember another patient who had a bleeding gastric ulcer; he had lost so much blood that the surgeon feared to operate on him. A blood transfusion, contrary to what we used to believe, has not only failed to induce more hemorrhage, but has stopped the bleeding and helped tide the patient over, until, at a later date, surgical interference was used and patient made a good recovery. I know of no other measure that has helped me make friends with the surgeon as advice as to the timely use of blood transfusion. The great difficulty comes in that a surgeon is apt to delay transfusion until it is too late. I believe you may compare it to the early days of antitoxin; men were afraid to use it early enough, and when they used it late they obtained no results. However, after they had learned to use it in time it proved a life saver. The time element in blood transfusion is a point that cannot be too strongly emphasized.

As to the blood grouping; in our early days we were in the habit of typing both patient and donor. You know it is kind of impressive to be able to tell your patient that he or she belongs to type one, two or three, but for practical purposes it is unnecessary; all that you need to do, and every man in the country could do it, is to mix the corpuscles of the patient with the serum of the donor, and vice versa; if no agglutination occurs, which can be recognized with the naked eye by the lack of formation of red brick dust on the slide, then you are safe. Blood typing is rather impractical in our opinion, for two reasons: First, you must have on hand a known group two or three, and second, you must know whether your known two or three has been typed according to the formula of Iansky or Moss, otherwise great confusion will arise. I have often seen severe reactions follow transfusion when, for instance, both donor and recipient were typed separately and found to be members of the same group. This, I believe, can be accounted for by the fact that enough corpuscles are left to clump in spite of the known group, and induce a severe chill. The same applies to the so-called universal group four; I feel that it is rather unsafe to use a patient of the four group as a universal donor. The safest thing in our experience has been to match the blood of recipient against donor each time until you have found that the corpuscles of donor are not clumped by the serum of the patient, and vice versa. The method we have used was sodium citrate. I recall, roughly speaking, about thirty-six cases that we have transfused, and only in two instances have we had reactions. We have found it a good plan to place the patient on sodium bicarbonate for twenty-four hours previous to transfusion, and to apply hot water bottles to his body right after the transfusion. This simple procedure seems to have lessened the incidence of reactions.

When it comes to transfusion of infants, there is no need to match patient against donor, for, as you know, in an infant the elements are not formed to place him in a definite group. It is safe to use the blood of the mother, which may often prove a life saving procedure.

H. W. BENSON, M. D., Oakland: I would like to ask if Dr. Pinney means a blood pressure of 70 is incompatible with life only in cases of hemorrhage and shock, or otherwise?

GEORGE L. PINNEY, M. D., Hastings: I referred only to hemorrhage and shock. The primary indication for transfusion of blood is, of course, in all cases where hemorrhage has been suffered. We have had very similar experiences to those mentioned by Dr. Wohl. One, in a small boy, following a tooth extraction, where all coagulants had been tried and only the transfusion of his mother's blood sufficed. He was a hemophilic. Another was that of an almost fatal nose bleed which responded to transfusion of blood after all other means had failed.

Naturally, in hypertension venesection is indicated to lower the blood pressure, then why should not the reverse be rational in raising the pressure, and as I mentioned in my paper, transfusion of blood alone can raise the blood pressure and sustain it.

I feel there are sound indications for the transfusion of blood in cases of puerperal infection, in fact all highly toxic cases, as well as for hemorrhage and shock.

I cannot agree with the advocators of the indirect method, for it does seem more reasonable to me to transfer unaltered fresh blood which is more beneficial to the patient, for how do we know but what there is some actual damage done when some anticoagulant is added?

As far as grouping is concerned, why not make it direct as well as the transfusion, and check donor and recipient. This can be done macroscopically, but the microscope makes it more of an art.

CHRONIC EMPYEMA WITH BRONCHO-PLEURAL FISTULA.*

C. H. Waters, M. D., F. A. C. S., Omaha, Nebr.

The war and the influenza epidemic with its pleural complications gave a remarkable impetus to thoracic surgery and has enlarged a field of endeavor hitherto little dreamed of. With the accumulating experience of many surgeons as a basis, we are finding that thoracic pathology of many sorts may now be attacked, not only much more aggressively but also with relative safety and greater promise of definite accomplishment than was formerly conceivable.

It is not my intention to discuss the details of this progress in technical procedure, or the reasons that have gradually led us to the conviction that the so-called radical attack of today, in so far as thoracic problems are concerned, will become presently almost as matter of fact as abdominal surgery. I choose, however, to report to you a case of chronic empyema complicated with a broncho-pleural fistula which presented not only the usual problems in an extreme degree but also some that were very unusual.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

In the early part of September of 1919, one of the most wretched of human beings entered the Swedish Mission Hospital to be under the care of Dr. Pratt and myself. In the preceding March he had been operated on for acute appendicitis which was followed by an influenzal pneumonia and, in turn, complicated with a massive empyema of the right side. He was so desperately ill at the time that a surgical consultant declined to operate, and the condition went from bad to worse until in the sixth week a bronchopleural fistula developed and nearly a wash-basin of pus was coughed up. During the succeeding three months practically the same amount was evacuated in a similar manner each day, accompanied with violent strangling and coughing. At this juncture Dr. Pratt was called in consultation and direct drainage of the cavity obtained by a simple intercostal incision. This relieved the situation and resulted in some general improvement. Unfortunately the tube either fell out or was removed after a brief interval and, in the presence of a bronchial fistula, gave rise to a most unusual complication which will be considered subsequently.

Two and a half months later, or six months after the onset of his trouble, his condition still desperate and further aggravated by having become a raving morphine habitue, and as nursing facilities were hopelessly inadequate, he was brought in to Omaha from the western boundry of the state.

Before his illness this man, a robust farmer, weighed 213 pounds, but at the time of admission his weight had dropped to 110 pounds. Emaciation was extreme and a bed-sore the size of a hand was found over the sacrum and lesser ones over each femoral trochanter. The thoracic drainage opening in the posterior axillary line was all but closed and discharging scantily. Temperature at this time was but 100.2 with a pulse of 110. Irrational to a marked degree his mental state as well as his physical condition seemed to be as much the result of morphinism as of profound sepsis.

On the following morning, three inches of the eighth rib was resected under local anaesthesia and an enormous cavity was disclosed, which extended from the level of the clavicle to the diaphragm and was in the maximum, perhaps, two and a half inches in depth. The collapsed lung was covered with a greatly thickened, gristly membrane, its surface smooth and glistening. No appreciable secretion was found in the cavity. The pleural opening of the fistula was situated at the base of the lung and was of such calibre that air passed through it freely and almost noiselessly, with each respiratory movement. At this juncture an unusual and very disconcerting discovery was made: The skin and subcutaneous fat was found detached from the underlying structure of the chest wall, over an area extending from above the middle of the scapula down to the iliac crest and from the vertebral spines forward to the border of the sternum. The whole of the examining hand could be introduced into this space, encountering here and there the cutaneous branches of the intercostal nerves and blood vessels. In addition, practically each rib had an area roughened and denuded of periosteum. In explanation of this curious complication, you will please recall that three months previous, simple intercostal drainage had been established, and that the tube had been allowed to come out prematurely. This favored superficial closure of the slit, and further interference with the passage of secretions and air undoubtedly was caused when lying on this side. It will be obvious that, in the presence of a bronchial fistula, the atmosphere pressure even in a partially closed empyema cavity may become sufficient during violent coughing seizures to produce an extensive subcutaneous emphysema. It is my conviction that this is what actually took place, and thus paved the way for the wide extension of infection. Unquestionably, absorption from this space was contributing to his septic state, and several long soft tubes were inserted into its recesses to facilitate irrigation.

In the week that followed our main effort was given over to the withdrawal of the morphine, with the result that there was not only an astonishing improvement in his general physical condition, but an equally gratifying restoration of sanity. In this period, too, the attacks of coughing became less frequent and less violent, and drainage from the empyema cavity reduced materially. The great subcutaneous space narrowed down as the result of daily irrigation and appeared finally to have become obliterated. Such proved not to be the case, however, for a sinus persisted which became the final factor to be contended with before he was completely cured. The chest cavity itself could not be irrigated because of the fistula, for even a few drops of fluid provoked violent strangling. On the other hand, he could demonstrate the patency of the fistula at any time by blowing a cloud of inhaled cigarette smoke through the hole in his side.

Five weeks after initial operative attack saw such marked improvement in his general condition that the time seemed propitious for a radical attempt to close the fistula and mobilize the lung. Under combined local and general anaesthesia, the existing thoracotomy opening was enlarged by an intercostal incision in the 7th interspace extending from the angle of the rib posteriorly forward to within two inches of the sternal border. This long incision with the aid of heavy self-retaining retractors, gave not only an exposure adequate for visualization of the cavity but permitted the introduction of the entire hand as well. The division of several transverse bands on the surface of the collapsed lung promptly demonstrated its expansibility and proved the absence of an interstitial fibrosis, which we had feared might have resulted from being in a contracted state for so long a time. Unfortunately at this stage of the operation the patient's condition became unsatisfactory and it was deemed inadvisable to continue. The fistula, however, was hurriedly cauterized and its pleural opening closed with two layers of mattress sutures. The thoracotomy incision was then closed, except for the original drainage site, with interrupted silk-worm gut sutures.

He reacted well in a general way but the discharge from the chest was quite profuse and very foul for several days. On the third our hopes went glimmering when it became evident that the fistula had reopened and, as a result, this operation had accomplished little or nothing toward benefiting his condition. In spite of it all his improvement continued, drainage from the chest again became quite scanty, he had gained in all some 40 pounds, and he was now given hospital leave frequently, often for several days at a time.

Inasmuch as we were unable to introduce fluid into the cavity to determine its capacity accurately, it was found possible to obtain a rough approximation of its size by introducing moistened gauze packing in such a quantity that when firmly compressed into a ball it was about the size of an adult head. A further idea in packing the cavity was with the hope, soon proved futile, that the diaphragm would thereby be sufficiently stabilized to favor the closure of the fistula. Although this procedure was repeated for ten days it did not produce discomfort, nor did it alter the amount or character of the drainage.

On the 13th of January, 1920, two and a half months after his second operation, his condition was deemed satisfactory for another attempt to close the fistula. The thorax was again widely opened through the scar of the former operation, ether anaesthesia being used on this occasion. The mouth of the fistula was found close to the diaphragm and with each downward movement of the latter it would gap widely. This would, in all probability, account for the re-establishment of its communication with the pleural cavity. The tract was then deliberately dissected out for a distance of an inch and a half at which depth it was found to communicate with one of the lower secondary bronchi. It was doubly ligated with chromic gut and excised, the stump buried in normal lung parenchyma by several rows of sutures.

Decortication of the lung followed, strips of membrane almost cartilaginous in character and fully a quarter of an inch in thickness being removed until the lower lobe was entirely liberated. The upper reaches of the cavity were not so accessible and here we had to be content with patchy removal supplemented with criss-cross incisions. The freeing of the lung in this manner was very striking and permitted it to expand appreciably even with the but slightly positive intra-pulmonic pressure normally present. The pleural cavity was thoroughly flushed out with saline solution and the thoracic wound closed except for the small space left for drainage.

The post-operative reaction was not as pronounced as we had anticipated it would be following a procedure of such magnitude. As early as the fourth day regular irrigations of the cavity were begun and, as no disturbance resulted, we concluded that the fistula had not re-opened and it did not do so subsequently.

The capacity of the pleural cavity at this time measured about 500 cc., showing marked reduction in size. At the end of ten days active measures were instituted to further even more rapid expansion of the lung. This, in part, was accomplished by creating a negative pressure within the cavity by the valve action of a square of fairly heavy rubber sheeting applied and fastened over the opening in the chest wall by wide adhesive strips running along but three of its sides. This apparatus in no way interfered with drainage and served excellently in maintaining a definite negative pressure in the cavity exerting its constant pull on the lung. Expansion was further encouraged by increasing the positive intra-pulmonic pressure by blowing exercises.

At the end of three months he was back at work with only a small persistent sinus with an insignificant amount of drainage which was due to an osteomyelitic process in the rib immediately below the drainage opening. After the removal of a small sequestrum the thoracic sinus closed and has remained so. He went through the summer performing the usual farm duties, gaining in strength and general health and now weighs 183 pounds.

In December he returned for a few days' attention to a superficial sinus, a persistent remnant of the old subcutaneous space previously referred to. Exploration showed that this tract passed from its opening just under the now healed thoracotomy drainage site in a zig-zag course downward to the iliac crest and thence toward the umbilicus. Transverse incisions, exposing the sinus at intervals, disclosed that its persistence was unquestionably due to small sequestral scales on the ninth and tenth ribs. These areas were thoroughly curetted and all granulation tissue removed and a month later all of the sinuses had healed.

This man has remained well, has regained his normal weight, there is no appreciable deformity of the thorax and the lung is functioning normally. In fact he appears to be no worse for his trying experiences, covering a period of two years, except for some slight myocardial disturbance which is hardly to be wondered at.

This case has been discussed in all its tedious details, justifiably, I trust, because it emphasizes what the proper use of conservatism, of extreme radicalism, together with time and patience, can accomplish in some surgical conditions of the thorax.

A summary of the foregoing should embody the following points:

(1) There is little excuse for chronicity in non tuberculous empyema.

(2) It is of the utmost importance to maintain free external drainage as long as a broncho pleural fistula exists.

(3) Broncho pleural fistulae require direct operative attack if they persist four weeks.

(4) The presence of broncho-pleural fistulae forestalls the customary and beneficial use of irrigations in ridding empyema cavities of infection.

(5) Decortication should be practiced earlier in all cases which fail to demonstrate progressive reduction in the size of the cavity. Furthermore, mutilating thoracoplastic procedures have a limited field of application.

(6) Negative pressure chambers, intratracheal insufflation or other elaborate apparatus is not necessary to the safe performance of radical thoracotomies.

(7) Safety in thoracic surgery embodies the principle of fractional procedure, namely, the several stage operation.

BIBLIOGRAPHY

Descarpentries. Bull. et M. Soc. de Chir. de Paris. 48. 615. May, 1922.

Duval. Presse Med. 30. 400. May, 1922.

Brauer. Beitr. z. Klin. d. Tuber. Berlin. 51. 319. Nov. 1922.

Eggers. Ann. Surg. 77. 142. Feb. 1923.

Hedblom. J. Iowa State Med. Soc. 13. 21. June 1923.

Rehn. Arch. f. Klin. Chir. 121. 288. Dec. 14, 1922.

Keller. Ann. Surg. 76. 549 and 700. Nov. and Dec. 1922.

Gast. Deutsch. Ztschr. f. Chir. 175. 219. Nov. 1922.

SOME UNDESIRABLE EFFECTS OF DEEP X RAY THERAPY.*

Carl Kail, M. D., Lincoln, Nebr.

A great deal has been written and published about the accurate measurement of dosage and excellent results obtained with the modern deep therapy treatments. But very little has been said about the undesirable effects which are sometimes encountered. I feel that a better understanding would exist between the roentgenologist and the rest of the medical profession if some of these points were brought to their attention.

Because the management of cases for deep X ray therapy has a direct bearing on the undesirable effects that may happen in the treatment of these cases, and because the medical profession as a whole is not familiar with the time required nor the care necessary in the handling of them, I feel that some discussion of this point is necessary.

These patients should all be hospitalized and should remain in the hospital for a week or ten days, or at least 48 hours after the completion of the treatment.

A blood count should be taken before treatment is started and another about 24 hours after the last treatment. Sometimes there is a drop in the red cell count of as high as 1,500,000. In one of my cases, a carcinoma of the neck, with a mediastinal involvement, the red cells dropped 1,600,000. Consequently, if a patient has a very low blood count, care should be taken not to give too long an exposure at one time.

As much preparation should be given these patients as is given a patient for a major operation.

The general condition of the patient should regulate the amount given at one time. In this country the entire treatment is very seldom given at one sitting. It has been our custom to divide the dose into two to six treatments—one every day or every other day. If possible the entire treatment should be given within a week.

It is the last few minutes of the last treatment which determines whether we are going to get results or not, and there is only a small margin between a lethal dose and enough to injure the normal tissues. A close attention to all these details lessens the sickness following the treatments.

About 4 to 18 hours following the treatment the patient usually becomes nauseated. This disappears within 24 hours as a rule. There have been several theories advanced as to its cause:

(1.) That it is the ozone liberated by the high tension current.

(2.) That it is the toxemia produced by the action of the rays on the cells of the body.

(3.) That it is the direct action on the blood.

(4.) That it is the action on the sympathetics.

(5.) That it is the action on the internal secretory glands.

Whatever the cause the most of these patients are sick.

Absolute rest, plenty of fluids, and 10 gr. of sodium bicarbonate every 3 hours, Pluto water or some mild saline cathartic, are agents which minimize the nausea.

Some excellent results have been reported with suprarenal gland preparations. If the patient is very cachectic, the toxemia following these treatments may prove fatal.

The toxemia is more pronounced in sarcomas than in carcinomas, and much more so in the leukemias and Hodgkin's disease. I am treating at present a case of Hodgkin's disease, and following a 30 minute treatment he becomes very much nauseated, which lasts from 48 to 72 hours.

There may be an inflammatory reaction of the mucous membrane of the intestines and bladder, causing a diarrhea and a cystitis. Some blood may be present in the stool and urine. Even a rupture of the intestines has been reported.

These patients should never receive abdominal treatment immediately following a barium meal. Metallic substances inside the body increase the secondary rays generated within the body and may cause severe injury.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15, 17, 1923.

This reported case of rupture of intestines may have been due either to overdose or to some metallic subject in the intestines.

As the rays have more of an action on glandular structure than on muscle, connective tissue, and skin, we would expect to get some injurious effects to the glands, which we undoubtedly do. However, if it is a case of sacrificing the patient's life or a gland it had better be the gland.

The function of these glands, the salivary, suprarenals, thyroid, etc., is not entirely destroyed.

The mouth may become very dry for several days or weeks following treatment which has to include the salivary glands; as carcinoma of jaw, neck, etc.

The suprarenals may be injured in treating cancer of the stomach, etc.

An old chronic infectious process may be made acute by treatment. This is another indication for a blood count, and a thorough diagnosis. Especially an old pelvic infection associated with a uterine fibroid.

In treating the chest we may get some injury to the lung. A pleurisy with effusion, some pain, and even a spitting of blood.

The depth dosage as measured by the ionization chamber applies to the abdomen, but not to the chest.

We use a water phantom in making these measurements, water having practically the same density to the rays as the abdomen.

The chest, especially the lung area, is much more translucent to the rays than is the abdomen; consequently, our depth dosage measurements do not apply to the chest.

If we should give a full epilation dose both anteriorly, and posteriorly to the chest, the lungs would be badly injured.

How to prevent injury to the lung and still deliver a full lethal dose to axilla, supraclavicular region, and mediastinum, has long been a problem. At present I am using a technique which I believe does come as near as possible to accomplishing this result.

A roentgenogram is first taken of the chest to determine how much, if any, involvement there is to the lung. If there is no apparent metastasis to the lung, the patient is given a full epilation dose anteriorly, using a large field, covering the entire chest on the affected side, including the axilla and supraclavicular region. A piece of lead 3-8 inch thick is cut the exact size of the lung area on the affected side. This is strapped to the back over the lung area and the treatments are given posteriorly. The lead protects the lung and at the same time the axilla and supraclavicular region receive sufficient dosage.

Of course, if the lung is entirely or almost entirely involved this is not necessary for, as the lung becomes involved it becomes more dense.

This technique is only applicable in treatments following amputation of the breast, or where there is no involvement, or only slight involvement of the lung.

To summarize:

In no way is this paper intended as an argument against deep X ray therapy but only to bring to the attention of the medical profession some of the undesirable things that may occur.

By careful examination and preparation of the patient, and closer attention during and following the treatments, most, if not all, of these undesirable effects can be avoided.

VENTILATION

A hothouse plant, grown in excessive warmth and humidity, is fragile and delicate, full of sap and lacking in fiber. Yet, if the temperature, humidity, and air movements are constantly varied without marked extremes, a much more hardy and virile plant can be raised, even in a hothouse. In the September issue of Hygeia, Dr. Robert F. Jones of the United States Navy gives some sound advice on ventilation. He says that the evil effects of bad air are not always apparent, but recent investigations lead us to believe that bad air has a marked effect on the body in its resistance to disease, particularly the common cold. Heat and moisture are probably responsible for the harmful effects rather than the chemical constituents. The oppressive feeling, the drowsiness and other discomforts of a person in a warm, close room are the result of too little cooling power of the air and not of an increase in the amount of carbon dioxide. Our aim in ventilation of houses would be to maintain the proper movement of the air, the proper amount of moisture, and the proper temperature.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor, Madison, Nebr.
R. B. Adams, M. D.,
Associate Editor, Lincoln, Nebr.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Nebr.
Tel. At. 6918.

Committee on Journal and Publication.
F. A. Long, Chairman Madison
W. O. Bridges Omaha
B. F. Bailey Lincoln
R. B. Adams, Ex officio Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk, Nebraska, as second class matter.

Vol. VIII October, 1923 No. 10

THE WILES OF THE ABORTIONIST

The writer was brought into contact recently, under somewhat unusual circumstances, with one of the willing victims of a wily abortionist resident in the interior of the state. It may be interesting and profitable to recount the story.

A young couple, parents of two babies within a year and number three in prospect, were unwilling to assume the added burden in the rather modest circumstances surrounding them. Temporarily staying in Omaha and having heard of several men noted as "specialists" in this line of work they consulted two and each one wanted $300 to rid the young woman of the pregnancy. This being beyond the limits of the family purse, they came nearer to the ancestral home and consulted a man reputed to specialize in this line of work.

He would do it for forty dollars cash in hand. There is nothing to it he told them. You hear of women dying in childbirth frequently, but you rarely hear of a woman dying of an abortion. Evidently with the purpose of further reassuring the patient of the complete success of his method the abortionist told the patient and her husband that he had done 45,000 (!) abortions in fifteen years and all recovered.

He boiled a half dozen instruments, went at his work deliberately and passed a curved instrument into the uterus and turned it around so it hurt some. After this he passed a long strip of gauze into the uterus. Instructions were then given that in from several days to a week all the products of conception would come away with considerable odor and with some pain, but that all this need not worry patient if no high fever developed. No doctor need be called into the case unless high fever developed and patient was instructed not to allow a doctor to clean out the uterus.

As the reader may guess, sepsis developed, the patient lost her nerve, called medical assistants, made a sworn statement, recovered "by the skin of her teeth", and the aforesaid medical attendants who saved her life are literally "holding the sack."

MEETING INTERSTATE SOCIETY OF RADIOLOGY AND PHYSIOTHERAPY AND MISSOURI VALLEY MEDICAL SOCIETY

Under the presidency of Dr. C. L. Mullins, the Interstate Society of Radiology and Physiotherapy occupied the floor the first two days of the Joint Session scheduled for Sept. 18-21.

The enthusiasm of the president was reflected in the meeting the entire two days. The program was a full one and all the papers were read and vigorously discussed. Probably the outstanding papers presented were "The Ethics of the Practice of Physiotherapy" by Dr. T. P. Bond of Des Moines and "The Relationship of the Radiologist to the Referring Physician" by Dr. W. A. Rush, Beatrice—outstanding because of the economic phase involved. All the Nebraska physicians on the program presented their subjects in a masterly manner. With considerable courage and faith in the future of the society the name was changed to The American College of Radiology and Physiotherapy. Dr. S. P. Childs, Denver, was elected president and Dr. Roy Fouts, Omaha, secretary-treasurer.

The Missouri Valley Medical Society opened Thursday with a forenoon of interesting clinics at a number of the hospitals. Promptly at 1:30 P. M. Dr. Floyd H. Spencer, president, opened the meeting, stated the rules governing the essayists and the discussions and proceeded with the program. Much interest was manifested in a number of the papers. Unfortunately two of the six essayists on the program for the first afternoon were absent, which in a measure marred what had promised to be a full session. The last day's program was full of interest.

Thursday evening Dr. Barney Brooks, St. Louis, gave an oration on "Diseases of the Blood Vascular System of the Extremities," based on experimental work of the orator. Dr. W. T. Wootton, Hot Springs, Ark., delivered the oration on medicine, his subject "A Consideration of the Immunity in the Life of a Syphilitic Individual."

Dr. H. J. Lehnhoff, Lincoln, was elected president and Des Moines designated as the next place of meeting.

Wednesday evening a banquet was enjoyed by the members of the two societies and addresses were given by president C. L. Mullin, Dr. B. B. Grover, Colorado Springs, and Dr. T. Howard Plank, Chicago.

The attendance at the two meetings totaled just about two hundred. It is not within the province of this journal to censor the actions of other societies, but it seems an open question whether the Missouri Valley Medical Society profited by the joint session.

ANNUAL MEETING ATTENDANCE

	Total Attendance	From Omaha and Lincoln	From out in the state
1919—Lincoln Meeting	273	111	162
1920—Omaha	285	157	128
1921—Lincoln	368	173	195
1922—Omaha	434	229	205
1923—Lincoln	405	164	241

Statistics are either a warning or an inspiration. It is believed we may assume from the above figures a warranted inspiration for our Nebraska State Medical Association. There has been a steady trend to a better average attendance at our meetings, a much larger proportionate increase in attendance than increase in the number of registered physicians in the state. There has been a steady increase in the attendance from out in the state, until at the 1923 meeting the proportionate attendance of members from out in the state surpassed any previous record. This is as it should be, and it further demonstrates the virile, active interest of our membership. It is the men from out in the state who have to sacrifice the most in time and expense to attend the annual conclave. Their coming indicates interest and appreciation and at the same time places upon the Omaha and Lincoln members a welcome responsibility. The responsibility of uniting in one solid phalanx to aid in preparing for our colleagues from all over the commonwealth, the program, the entertainment and the hearty welcome that they deserve.

Upon the men and women of our profession outside of Omaha and Lincoln devolves the responsibility of impressing upon the profession in those cities their demand for a united profession and the same example that they have been steadily developing in a larger proportionate membership and attendance. The increase in the general state attendance in 1923 was in spite of rain and mud, both of which were in excess. With this increased and united interest in our profession, the close observer may sense the increased respect of the public for a profession that is becoming self supporting, self respecting and thus "coming into its own."

In October there will be a "gathering of the Clans" in the district meetings. My plea is that these meetings be a rallying time for the securing of the application of every professional brother or sister in the district who is eligible and worthy and who has not yet become allied with us in our professional organizations.

The strength of organization, the self respect engendered by voluntary and cordial fellowship, the mutual help in interchange of experience, the inspiration of a growing comradely affection, can but convince the world by inference that our work has been, is, and will be one of sacrifice. The sacrifice of those who like Abou ben Adhem "love their fellow men."

The commercial side of our lives is of incident and a necessity for which we have no apology.

To our members greeting. To those who are not members but are eligible, you are not giving the support to your fellows that the world has a right to ask and we call you to join us in organized effort for a common cause. Let every district meeting this fall be education, promotional, inspiration.

—Benj. F. Bailey.

MALIGNANCY OF THE TESTICLE—A CANCER OF YOUTH

Ordinarily cancer is a disease which is incident after middle life but there are important exceptions. One of these exceptions is malignancy of the testicle which has its greatest incidence between the ages of twenty and thirty.

Tumors developing within the testicle may be hard or soft, cystic or solid, encapsulated or free growing. Histologically they may be fibroid, adenoma, small cell sarcoma, or teratoma. Teratoma may be the congenital type appearing at birth or the so called acquired type appearing later. Congenital teratoma may be benign or malignant. All acquired teratomata are malignant. All new growths within the testicle should be looked upon as malignant unless proven otherwise.

The fact that malignancy of the testicle is a cancer of youth often leads to missing the diagnosis and to consequent delay and neglect of immediate radical operation which is the only hope of cure. The mortality of the disease is very high.

An interesting illustrative case of this disease which brings in many complicating features that are characteristic of cancer involving the region where an extremity joins the torso is one reported by M. Manclaire: Intratesticular Embryoma with Very Slow Malignant Evolution. (Bull. et. mem. Soc. de chir. de Par., 1922, xlviii, 163-164.)

The patient was a man 47 years old. Three years before the right testicle had begun to enlarge. A year and a half later ganglionic masses had appeared at the base of Scarpa's triangle with edema of the thigh. The edema extended to the leg and the foot.

When the patient was admitted for treatment, there was observed at the right in the scrotum a regular testicular mass the size of a very large pear. It reached the cord up into the inguinal canal. It adhered in places to the lower surface of the scrotum.

In the bend of the right groin the inguino-crural ganglia were hard, resistant, only slightly mobile. In the iliac fossa, one could feel a slightly mobile ganglionic mass. The lumber ganglia could not be palpated. The general condition of the patient was very good.

Operation: Incision through the abdominal wall recommended by Cheassu. Total extirpation of the testicle, the spermatic cord, the adherent scrotal integument, the iliac ganglia and the spermatic sheath up to the pedicle of the kidney. In this region, ablation of one ganglion in front of the inferior vena cava. Exploration upward, no other ganglia found. Ablation of the inguino-crural ganglia. Inguino-lumbar drainage. Uneventful recovery.

Seven months later the disorder recurred. There was no recurrence in the inguino-crural region. In the iliac fossa and the lumbar region one could not palpate any ganglionic masses. But the hard lymphatic edema of the thigh increased. The penis also showed a hard lymphatic edema.

The scrotum and the pubic region likewise had the same indurated edema. In the left inguina-crural region two ganglionic masses could be palpated. The general condition continued good.

Examination of the specimen showed that the great pyriform testicular mass had a lardaceous aspect in the center. The iliac and lumbar inguino-crural ganglia were indurated and frankly neoplastic.

One of them showed virulence. This, the author believes, was the one in front of the vena cava.

Histologic examination of the tumor and the ganglia: Multinuclear elements related to chorio-epithelioma or placentoma or malignant plasmodium.

The diagnosis was malignant testicular embryoma with ganglionic generalization.

The points of interest in this case are first of all, the very slow malignant evolution of the testicular tumor, covering a period of at least three months and a half; in the second place, the hard lymphatic edema of the lower limbs, of the penis and of the scrotum after the ablation of the lymphatic region of the iliac fossa and the pedicle of the kidney. It recalls the hard lymphatic edema of the arm after the ablation of the whole lymphatic system of the armpit.

—David C. Hilton.

REORGANIZING THE PROFESSION

If you served with combat troops during the World War you know that the unit organizations were well organized and functioned accordingly. You will also suspect that the general staff was the weak spot in the American army.

In the medical profession, it seems to me that the reverse is evident. The general staff has been thoroughly organized and has functioned splendidly. The unit organizations have not functioned to the degree expected of them and of which they are capable. Now unless there is a close cooperation between the general staff and the regimental units, the full force of the army is not felt.

When the American College of Surgeons was organized, a progressive and wholesome revolution was begun. There were many physicians who were not yet ready to accept this advance. This has been true of many great reform movements. The staff of this great organization has been thoroughly organized. Using a military map, it would be placed with the Association of Standardized Hospitals in the Base Section. The Advance Zone being occupied by the general practitioner. They are the combat troops and the forces in this zone have not been organized, tutored or drilled except in an indirect way. They have, however, borne the brunt of the assault.

As I see it, the organization of the medical forces has been at the top instead of the bottom.

Egotism and selfishness are two dangerous traits of character. They have destroyed every great organization in the past. We all have more of these attributes than we should have. We, all, have more pride than we like to admit. We, all, have more of the "green eyed monster" than is good for the whole. I believe that a great deal of the effect of these vices can be overcome by a better professional understanding, which I am certain could be accomplished by the following program. My solution is the organization of the general practitioner along the same lines and ideals as the American College of Surgeons. Each member of this organization to be a Fellow of the American College of Medicine, a part of the parent organizations, American College of Surgeons and American College of Physicians.

It would give every physician who entered the American College of Medicine a standing in the community and a recognition which he has no way of getting before the public at this time. It would be an inspiration to do not only better medical work but better economic work. It would allay to a very great extent the present distinction made by the public (and some medical men) between the general practitioner and the specialist.

All that is to be accomplished must be done by education. This organization would form an excellent force of known strength with which to reach the public with a program of education on desirable subjects. They would be shock troops to carry on in the advance zone. It would form an equitable liaison between the specialist and the general practitioner. It would be an organization to supply the attendance of yearly postgraduate work at the state F. A. C. S. meetings. It would furnish material for future F. A. C. S. and F. A. C. P. The well educated medical graduate of today, would be quick to recognize its value and would avail himself of the benefits.

I firmly believe that in five years it would change the whole restless mass to a well organized fighting force, without loss of medical idealism, and with increased confidence and faith of the general public, which is the court of last resort.

—C. C. Johnson.

A BRIEF HISTORY OF MEDICAL ORGANIZATION IN OMAHA

The first meeting of the physicians of Omaha, of which we have any knowledge, was held in 1857 or 1858. The object of this meeting was the adoption of a fee-bill but it does not appear that a fee-bill was adopted at that time.

The first meeting looking toward the organization of a medical society, was held June 14, 1866 and The Omaha Medical Society was organized with 13 members. The officers, who were not elected until the following November, were: President, Dr. J. P. Peck; vice president, Dr. Roeder; secretary, Dr. Rippey; and treasurer, Dr. J. H. Peabody. This society met with a good degree of regularity, devoting itself to the discussion of papers presented and to other matters touching the interests of its members. On December 17, 1866, a fee-bill was adopted, a copy of which is in the possession of the writer. The conspicuous absence of many procedures in common use today is one of the interesting features of this document.

At a meeting held February 10, 1868, preliminary steps were taken to organize a State Medical Association. This action culminated in the following June in perfecting that organization of which today we are all rather proud.

This Omaha Medical Society continued to function, with varying interest until about 1877. From that time onward it had a semi-moribund existence until, in 1881 it expired.

For a period of about two years Omaha had no medical society. Then, on April 18, 1883, 28 of the physicians of Douglas County met at the Millard Hotel and organized the **Doug-**

las County Medical Society, with Dr. Harvey Link as president. During the next three years this society met semi-monthly or monthly, its affairs going on in the most satisfactory manner. During the early part of 1886 the attendance was very small. Some members withdrew, being offended on account of criticisms of their papers. Many of the older practitioners were rarely present because of professional engagements. Finally, at a meeting May 4, 1886, a motion was carried: "That when we adjourn we adjourn sine die."

On January 4, 1888, the Omaha Medical Club was born. It lasted two years. Its membership, first to last, was 26. Nobody was admitted to full membership until he had presented a paper before the Club. Its meetings were held semi-monthly except during July and August. There was never a failure to secure a quorum of seven members and on only one occasion did the essayist fail to do his part.

Early in 1888 the Omaha Academy of Medicine was organized in a most elaborate way but with a limitation of its membership to 30. The Medical club, desiring only the best interest of the profession, decided to discontinue its meetings to leave the field clear for the new academy. But the Academy expired after a sickly existence of less than a year.

To mention the foregoing facts in the history of the Omaha profession is no more than just, as evidence that from the very early days there were those who recognized the importance of mutual association even though they did not get very far in their efforts.

In response to an invitation by post-card, a number of Omaha physicians met at the Paxton Hotel on March 18, 1890. They organized temporarily with Dr. B. F. Crummer in the chair and Dr. Charles Rosewater, secretary. Having appointed a committee to draft a constitution and by-laws the meeting adjourned for one week. At the expiration of that time, these with other physicians, assembled at the same place. A permanent organization was then effected with the following officers: President, Dr. W. F. Milroy; 1st vice president, Dr. B. F. Crummer; 2nd vice president, Dr. A. F. Jonas; secretary, Dr. Charles Rosewater; treasurer, S. K. Spaulding. Doctors D. C. Bryant, W. H. Christie and J. P. Lord were elected a Board of Censors. The society was called "The Omaha Medical Society."

There were present at this meeting 83 physicians. Of these 22 are at present engaged in practice in Omaha. Of the 61 no longer here 46 are known to have gone to their eternal reward, 6 are known to be living elsewhere, the present status of the remaining 9 being unknown to the writer.

To all intents and purposes, from the time of its organization, the Omaha Medical Society has been the Douglas County Medical Society. However, when the A. M. A. was reorganized and organization of the profession of the whole country was accomplished, the officers of the A. M. A. strongly opposed recognition of this society as part of the general organization unless it would change its name to "Douglas County Medical Society." The Omaha people had come to be right proud of their society and were unwilling to surrender its name. A compromise was affected by calling it the "Omaha-Douglas County Medical Society" and by that name it is officially recognized by the A. M. A. This change took place on February 10, 1903.

An inspector of the A. M. A., who canvassed the matter in 1918, reported that 88 per cent of those entitled to membership were actual members of the society. He also stated that in the whole United States there was only one county in which the percentage of eligibles who were members was larger than in Douglas County, Neb. It is probable that the same condition exists today. The total membership today is 319. The average attendance in 1922, at the meetings, was 121. As organized all of the business of the society is conducted by the Council. The present officers are: President, Dr. James M. Patton; vice president, Dr. G. W. Dishong; secretary-treasurer, Dr. Roy A. Dodge.

—W. F. Milroy.

MEDICAL WOMEN'S NATIONAL ASSOCIATION

The Ninth Annual Meeting of the Medical Women's National Association was held in San Francisco, June 25 and 26, in conjunction with the American Medical Association Meetings, Dr. Grace N. Kimball, President; Dr. Kate Campbell Mead, President-Elect. At the open session, Monday evening, Dr. Ray Lyman Wilbur, President-Elect of the A. M. A., delivered an eloquent and inspiring address on the Power of the Minority.

At the open session, Tuesday morning, a Five Year Program was presented by the Executive Committee and Council, and was adopted. This Program is under five Heads:

1. Continuation of the Work of the Committee on Medical Service, American Women's Hospitals; Dr. Esther P. Lovejoy, Chairman, 637 Madison Ave., New York.

2. Federation of Medical Women's Organizations with the Medical Women's National Association, under Organization Committee; Gertrude A. Walker, Chairman, Whitefield, N. H.

3. Public Health, co-operating with A. M. A. Council on Health and Public Instruction, Hygiene, and Women's Foundation for Health, etc., Dr. Elizabeth B. Thelberg, Chairman, Vassar College, Poughkeepsie, N. Y.

4. Committee for Medical Opportunities for Women, Dr. Sue Radcliff, Chairman, 21 Morris St., Yonkers, N. Y. Internships for young Graduate-Members of the M. W. N. A., in Hospitals conducted by the American Women's Hospitals; in Missionary Hospitals and in Hospitals in U. S. A., as well as opportunities for private practice, Service on Boards of Health, Government Appointments, etc.

5. Publicity for the Medical Women's National Association through the Bulletin and an Editorial Staff, consisting of the President and Executive Committee, President-Elect and an Editor-in-Chief. Dr. Grace N. Kimball, Poughkeepsie, N. Y., was appointed Editor-in-Chief.

The Bulletin, which was published quarterly last year, will be continued as the Official Organ of the Association and sent to all Members of the M. W. N. A.

An Amendment to the Constitution was passed, providing for Group Membership. This was in response to proposals for Federation made last year by certain State societies of Medical Women.

Under the Group Membership Amendment, organizations of women whose basis of membership conforms to that of the M. W. N. A., viz; Membership in the A. M. A., may join the National as Group Members:

Kansas State Medical Women's Society

New York State Medical Women's Society

Connecticut State Medical Women's Society

Portland, Ore. State Medical Women's Club affiliated through their representatives at the San Francisco meeting.

The Nebraska, Los Angeles and New England Medical Women's Societies signified their desire to take action regarding affiliation.

The M. W. N. A. had a most interesting exhibit. Booth E of A. M. A., Scientific and Educational Exhibits, showing the work of the American Women's Hospitals in Greece and Serbia. Twenty Hospitals and a large number of Dispensaries are being run by this Committee of the M. W. N. A. in Greece alone, under the directorship of Dr. Mabel Elliott, New York Headquarters, 637 Madison Ave., New York; Dr. Esther P. Lovejoy, Executive Secretary.

Four periods on the A. M. A. Moving Picture Theater were assigned to the National—a film of Work in Greece, Crete and the Quarantine Work on Macronessi Islands, shown by Dr. Esther Lovejoy; and slides of Hospital and Surgical work in Serbia, under Dr. Etta Gray.

Dr. Kate Campbell Mead, of Middletown, Conn., was installed as president. Dr. Katherine C. Manion, of Port Huron, Mich., was chosen president-elect.

The following officers were elected:

First Vice President, Dr. Marjory J. Potter, San Diego.

. Second Vice President, Dr. Marjory J. Potter, San Diego.

Third Vice President, Dr. Florence W. Duckering, Boston, Mass.

Secretary, Dr. Jessie W. Fisher, Middletown, Conn.

Treasurer, Dr. L. Rosa H. Gantt, Spartanburg, S. C.

The 1924 Annual Meeting of the Medical Women's National Association will be held in Chicago, Ill. —x x x

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C.................................October 8, 1923
At Chicago, Illinois..................................October 8, 1923
At San Francisco, Calif...........................October 8, 1923

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

—H. S. Cuming,
Surgeon General.

TRI-STATE DISTRICT MEDICAL ASSOCIATION

Meeting at Des Moines, October 29-Nov. 1, Headquarters Fort Des Moines Hotel. Physicians of Nebraska who are in good standing in the state association are cordially invited to attend and take part in the program. The "Tri-State" is a purely post graduate organization. The entire time is taken up with scientific study—no banquets.

Symposiums will be given as follows:

University of Chicago, Medical Department (Rush). Supervised by Dr. Dean Lewis, Prof. of Surgery.

University of Indiana, Medical Department. Supervised by Dr. Charles P. Emmerson, Dean & Prof. of Medicine.

University of Iowa, Medical Department. Supervised by Dr. Walter L. Bierring, Des Moines.

University of Michigan, Medical Department, Supervised by Dr. Hugh Cabot, Dean & Prof. of Surgery. Associates, Dr. Thomas Addis, Prof. of Medicine, Stanford University, San Francisco, Dr. L. H. Newburg and Dr. A. S. Warthin.

University of Minnesota, Graduate School of Medicine, Mayo Clinic. Supervised by Dr. William J. Mayo.

Northwestern University, Medical Department.

Supervised by Dr. Frederic A. Besley, Prof. of Surgery.

Western Reserve University, Medical Department, Crile Clinic. Supervised by Dr. George W. Crile, Prof. of Surgery. Associates, Dr. T. E. Jones and Dr. U. V. Portmann.

University of Wisconsin, Medical Department. Supervised by Dr. John L. Yates, Milwaukee, Wisconsin.

Managing Director,
Dr. W. B. Peck,
Freeport, Ill.

THE SOCIETIES

Fifteen members of the Custer County Medical Society enjoyed a picnic at Electric Park, near Arnold, in mid-August. Dr. F. A. Burnham, Arnold, read a paper on Psoriasis and Dr. Frank Conlin, Omaha, gave an interesting lecture on Insulin.

The Fillmore County Medical Society held a picnic on Turkey Creek near Milligan, August 28. The doctors and their families spent a pleasant afternoon playing "one old cat", pitching horse-shoes and "swapping yarns." "How have the mighty fallen!"

FOR SALE

Dr. L. W. Wuesthoff, Madison, Nebr., has left on account of wife's health. His combined office and residence property for sale, for $9,500. B. & L. will carry $5,000, balance cash.

Madison is county seat with 2,000 population, very best farming community. Practically no competition. Fine chance for a physician. Practice good for at least $6,000 a year.

Dr. W. offers 180 of his medical books, all standard works for $35.00—no trash, a real find for a young man. An iron all leather bottom reclining office operating and gynecological table, $25.00. All iron portable table, $8.00. Complete alternating McIntosh wall plate, marble slab, in glass case, $50.00. Six bottle nebulizer, large tank, air-pump, $20.00. Three glass shelf office stand, $9.00.

Send all communications to Dr. F. A. Long, Madison, Nebr., in whose charge property is left; or better still, come at once if you want to step into a good opening.

NOTES ABOUT THE DOCTOR

Dr. J. E. Ingram has moved from Harvard to Nelson.

Dr. E. A. Sommer has moved from Ashland to Lincoln.

Dr. J. E. Mannion has left Ponca to practice at Kimball, S. D.

Dr. J. E. Warrick, formerly of Hastings, has located at Wood Lake.

Dr. J. R. Dewey, formerly of Moville, Iowa, has located at Oakland.

Dr. E. C. Henry, Omaha, spent his vacation in Colorado and Wyoming.

Dr. and Mrs. J. H. Hutten, Omaha, have gone on an auto trip to California.

Dr. and Mrs. J. R. Beatty, Butte, have returned from an auto trip to Kansas.

Dr. and Mrs. E. A. Van Fleet, Omaha, spent a short vacation at Lake Okoboji.

Dr. C. C. Barr and family, Tilden, have returned from an auto trip to Yellowstone Park.

Dr. Louis Smernoff, Omaha, returned September 1, from post graduate study in New York.

Dr. and Mrs. W. L. Shearer, Omaha, returned from northern Wisconsin early in September.

Dr. J. F. Lauvetz, Wahoo, did post graduate work in pediatrics in Chicago during the summer.

Dr. J. S. Bell, York, has been awarded a gold medal-key from Cook County Hospital, Chicago.

Dr. C. B. Foltz and family have returned from a trip to the Pacific northwest and California points.

Dr. George B. M. Reese, of Peru, Indiana, is scheduled to locate at Arapahoe about October first.

Dr. A. D. Munger, Lincoln, suffered serious lung injuries at the national guard camp, Ashland, while bathing.

Dr. J. R. Cameron, and family, Bennett, took an extensive vacation trip to Colorado points in August and September.

Dr. J. F. Allen, chief medical officer of the veterans' bureau in Omaha since the establishment of the office, has resigned.

Dr. A. T. Bailey, Sioux City, has become associated with Dr. A. E. Gadbois, Norfolk, in the eye, ear, nose and throat specialty.

Dr. C. E. Johnson has moved from Wood Lake to Valentine, succeeding Dr. C. F. Ulrich, who has gone east to do post graduate work.

Dr. V. R. Vinsant, Pawnee City, has purchased certain medical interests at Summerfield, Kansas, and will take charge immediately.

The medical friends of Dr. Fred. Hahn, Hastings, regret to learn that he has suffered a complete breakdown and is under hospital care at Lincoln.

Dr. H. Guy Brown and family, Lincoln state hospital, suffered serious injuries and the loss of the car in an auto collision in Lincoln early in September.

Dr. Carl Rusche, Columbus boy, has gone to California and will locate in Hollywood as a part of a group of which Dr. Paul Roen, also former Columbus boy, is a part.

Dr. L. T. Sidwell, for several years superintendent of the Hospital for Tuberculous at Kearney, has been transferred to the headship of the Beatrice Home for the Feeble-Minded.

Dr. J. M. Tische, Wood Lake, has gone east to take post graduate work in eye, ear, nose and throat diseases. He expects to spend some time in Chicago, New York and St. Louis.

Dr. C. C. Moore has become district surgeon of the Union Pacific at Fremont, succeeding Dr. Andrew Sinamark who moved to Omaha to take a position in the veterans' bureau.

Dr. C. E. Rice, Odell, deserves honorable mention as a man of courage and quick perception by the way he handled the arrest of two dope fiends who had entered his office in search of narcotics.

Dr. G. H. Brash, Beatrice, submitted to an operation in Boston during August for removal of a brain tumor and is convalescing normally. On leaving the hospital Dr. Brash and family visited at Cambridge, N. Y., before returning home.

Dr. L. B. Pillsbury, formerly connected with the Lincoln state hospital and for the last several years a neurologist in the army and stationed at Manilla, P. I., accompanied by Mrs. Pillsbury, has been visiting in Lincoln for some time. The doctor has been transferred to Fort Leavenworth, where his work as a mental specialist is with ex-service men.

THE NEBRASKA STATE
MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, November, 1923. No. 11

CONTENTS

Page
Fractures of the Femur, J. E. M. Thomson, M. D. 381
Scientific Knowledge Logically Applied in the Treatment of Acute Urethritis, Arbor D. Munger, B. Sc., M. D. 385
Problems of Epilepsy, Harrison A. Wigton, M. D. 387
Chronic Infectious Arthritis, Lynn T. Hall, M. D. 392
Methods of Treatment of Affections of the Antrum of Highmore, A. G. Lueschen, M. D. 397
The Point of Contact, Robert McConaughy, M. D. 399
Primary Mumps Infection of the Lacrimal Glands, Arthur E. Wade, B. Sc., M. D. 404
Injurious Effects of Improper Light Upon the Eyes, L. B. Bushman, M. D. 406
Vacuum Sinus, Geo. A. Griot, M. D. 407
Rat-Bite Fever. Report of Case. E. S. Wegner, M. D. 408
Report of Case of Acute Lymphatic Leukaemia with Secondary Infection of Tongue—Death, Max Emmert, M. D. 410

EDITORIALS—

The 1923 Cancer Campaign 412
Why Pollen Treatment Often Fails: A Botanist's Viewpoint 412
The Mortality of Some of the Common Communicable Diseases of Childhood 413
Acute Head Injuries 414
Heredity 415
The Societies 417
Notes About the Doctor 418
Hymeneal 418
Necrological 418
The Treatment of Diabetes Mellitus with Insulin 419
The Routine Treatment of Diabetes with Insulin 420
Books Received 420

FRACTURES OF THE FEMUR.*

J. E. M. Thomson, M. D., Lincoln, Nebr.

There are certain fixed principles in the treatment of fractures of the femur that if followed cannot but bring satisfactory functional results as well as good anatomical apposition of the fragments. For convenience in outlining the treatment one may divide the femur into three regions where fractures most commonly occur. First, the upper end of the femur; second, the shaft; and third, the lower third of the femur.

Fractures of the upper end of the femur, due to the soft tissue attachment, cause an outward rotation of the head, and upward and inward displacement of the shaft with adduction of the extremity. Fractures in the region of the trochanters may result in a similar deformity as above described, but often upper fragments may assume a flexed position towards the abdomen. In either instance there may be severe comminution or impaction of the fragments.

Fractures of the shaft may be considered as the second class of cases. It is in this region that open operation is more often justified and necessary than in any other part of the femur, due to the fact that muscular tissue here is more apt to become interposed between the fragments and make apposition by ordinary mechanical methods impossible. However, if these fractures have traction applied early, operative intervention is seldom necessary.

If the break occurs in the shaft the upper fragment assumes a position of flexion and outward rotation; while the lower fragment is usually posterior and inward. Fractures of the lower third of the femur usually result in a marked backward pull of the lower fragment towards the popliteal region.

---

*Read before the Nebraska State Medical Association, Lincoln, May 15-17, 1923.

The most essential part of the treatment of all these fractures is immediate immobilization and adequate traction. For this purpose the Thomas splint is the best and perhaps the only adequate first aid measure, and should be applied if possible even before the patient is moved from where the injury occurred. Every doctor should have in his possession one of these splints if he expects during the course of his practice to take care of a fractured femur. Its use has been so universal that it is scarcely necessary for me to review its many advantages; however, I will briefly state the technique of applying a Thomas splint.

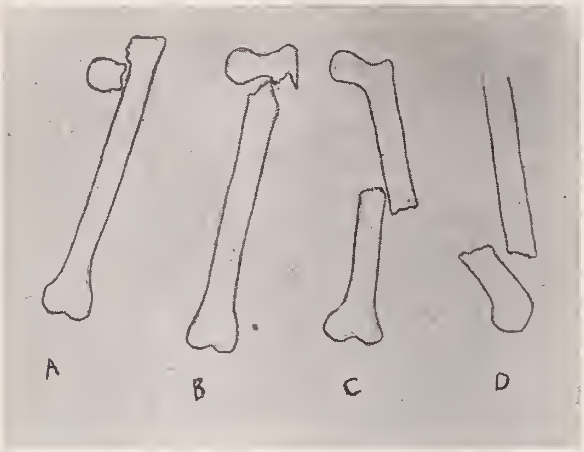


Fig. No. 1—Common types of fractures of femur with their usual deformities. From left to right: (A) Fracture of neck. (B) Fracture of upper third. (C) Fracture of shaft. (D) Fracture of lower third of femur.

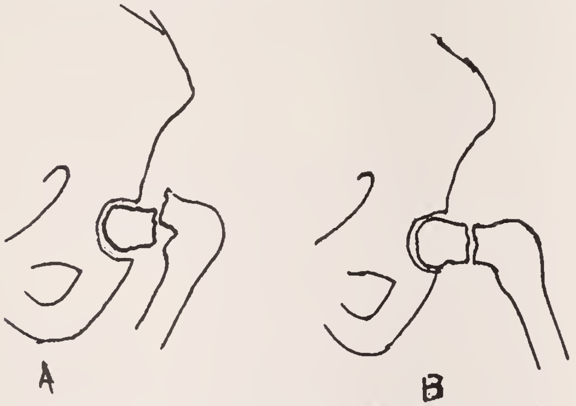


Fig. No. 2—Illustration of the effect of traction and abduction in Whitman position on fractured neck of femur (B), with a common displacement of lower fragment and adduction of thigh (A).

We use for ordinary traction purposes mole skin adhesive straps, two inches wide, at the end of which is sash cord rope sewed into the mole skin fabric. One of these straps is placed on either side of the leg beginning well above the knee, the rope ends of which extend from the ankle down. Over these is placed a snugly applied muslin bandage. When the bandage has reached the ankle the straps are turned back to a point just above the maleoli and the muslin bandage is wrapped about this region and the foot to protect these bony prominences from irritation of the adhesive. The foot is at all times held at a right angle to the leg. During this entire procedure the assistant grasping behind the heel with one hand, and the toe region with the other, maintains firm traction on the leg and minimizes in this way the pain and discomfort of the patient due to the procedure. After the leg is bandaged, traction can then be maintained by pulling on the ropes. Before applying the mole skin straps, the Thomas splint should be equipped with six double muslin strips to be used as hammocks across the bars. The splint should be bent at the knee slightly if the fracture is high up in the femur, and to an angle of 30 or 45 degrees if the fracture is in the lower portion of the femur. The hammocks should swing from the inner bar to the outer bar and fastened there by clips or safety pins to allow easy access for adjustment. While traction is constantly maintained the splint is slipped over the foot; the bars on either side of the leg, the inner aspect of the ring brought to a position against the ischium, then one rope is placed over the bar at its side, and the other under the opposite bar, and both brought across the end of the splint and tied securely. A twisting stick is applied to regulate the traction necessary and the hammocks are adjusted so that the leg swings well up in the splint. If the splint is to be used purely as a first aid measure, the patient is now ready to be moved to a hospital. If used as a permanent fixation for the fracture, the foot of the bed should be elevated 8 or 10 inches. The splint is swung from the bed under an over-head frame, and the end of the splint is tied to the foot of the bed.

If the fracture is high up in the femur, of course the splint must be extremely abducted. However, for fractures of the upper end of the femur, a plaster of Paris double spica is preferable, with the fractured leg extremely abducted to an angle of about 45 degrees with the mid-line of the body (in the so-called Whitman position) and the opposite leg abducted at least half that much. For applying such a cast the patient is placed on a fracture traction table, as by this method more accurate traction may be exerted. Mole skin traction straps may be used for traction by bandaging the foot to a foot-piece of the traction table. If a traction table is not available, an ordinary hip rest box can be used and traction maintained by an assistant, while the other leg and the body is held in a fixed position by other assistants. Sufficient traction must be maintained to overcome shortening or impaction so that the injured leg before the cast is put on is equal in length to the opposite member. The legs and lower trunk to well above the rib margin are covered with a firm, smoothly applied sheet wadding bandage. Felt is placed over the bony prominences of the anterior superior spine of the ilium, and over the patella, as an added precaution against rubbing and irritation of the cast. Over this is applied a smooth firm bandage of muslin. The plaster of Paris bandages are now applied to sufficient thickness to make the cast strong enough to turn the patient and properly care for his toilet. A board placed behind and just above the knees and imbedded in the plaster of Paris cast strengthens the hip portion of the cast. The cast should extend from just above the lower border of the ribs to the toes of the injured limb, and to a point below the knee of the opposite leg. If traction is maintained by adhesive, the rope ends can be imbedded in the cast and permanent traction maintained in that way. Openings are made over the abdomen, over the knees, under the heel, and around the genitalia. This procedure should be carried out under an anesthetic and before the patient wakes up the foot of the bed should be elevated and weight and cord traction should be applied to the board between the legs and over the foot of the bed. This adds much to the comfort of the patient and assists in keeping up a certain amount of traction. The reason for placing both legs in the cast is to prevent tipping of the pelvis, which is often difficult to overcome when the patient becomes ambulatory. The patient should be turned at least once a day on his face for a period of two hours or longer. The cast should be worn for eight weeks. When the cast is removed, the patient is then placed in a double lateral iron splint with a well fitting ring similar to that of the Thomas splint, the end of the splint is turned into holes in the heel of the shoe. In this apparatus the patient becomes ambulatory and is ready for the application of physiotherapeutic measures. This splint should be worn for four weeks, and by that time the patient should be free from danger so far as the leg is concerned, and about ready to return to his former activities. Physiotherapy should be continued, however, for two weeks longer.

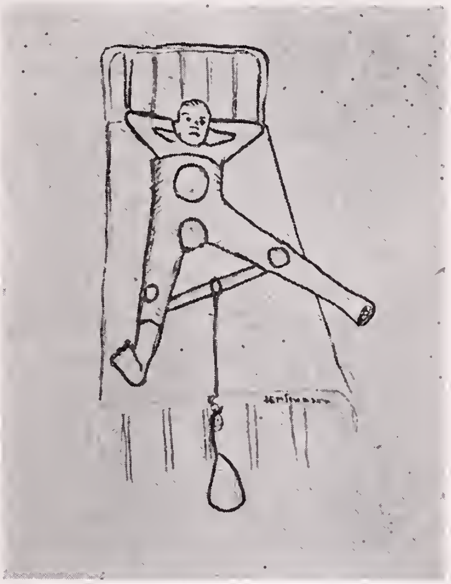


Fig. No. 3—Patient with doublo spica cast, the fractured thigh abducted to angle of 45 dogrees with mid line of the body, the opposite leg abducted. Traction applied over end of bed from bar between the logs. The foot of the bed should be raised 8 to 10 inches. **The** effect of this procedure is shown in Fig. No. 2 (B).

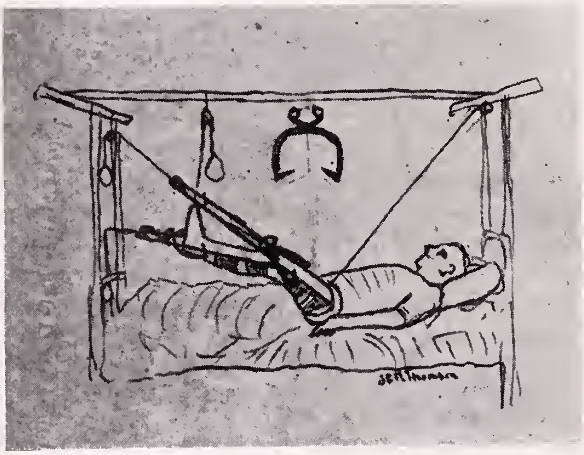


Fig. No. 4—Illustration of application of double incline plane Thomas splint as used for fractures of the lower third of femur, with ice tongs in the lower fragment and traction in the same plane of the thigh. Fig. No. 5 (B') shows the effect of tongs or pin used in this manner.

For fractures of the shaft we believe that a spica cast is the best method for immobilization. Every effort should be made by manipulation and traction to bring about a reduction of the fragments without an open operation. Should this fail, and indeed rarely does it fail, operation is in order and approximation may be brought about after the obstructing tissues have been freed and fixation can be accomplished by a nail or bone graft or one of the other approved methods. During all operative procedures rigid traction should be maintained to overcome the over riding of the fragments, and give full length to the extremity. A plaster of Paris spica should be applied, the thigh being flexed and abducted to an angle sufficient to best maintain the approximation of the fragments. Here a single spica cast is usually sufficient, however, it is best to extend the body portion of the cast to the axilla, and in that way more perfect immobilization of the thigh can be maintained. Ice tongs can be used in this class of cases when external traction is inadequate. After eight weeks in the cast, a walking caliper splint is applied and physiotherapy instituted.

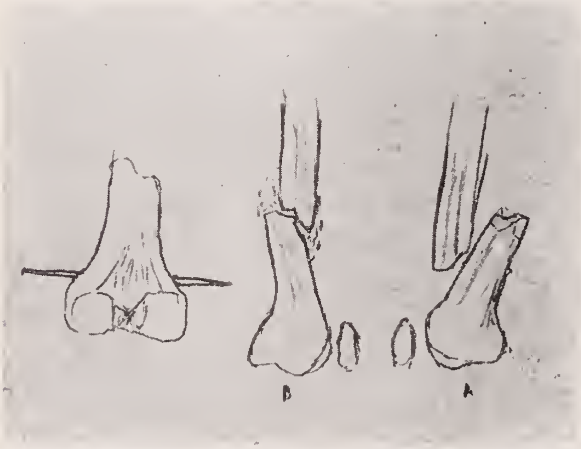


Fig. No. 5—The left drawing shows position just above condyles at which pin or tongs are placed for traction purposes.
(B) Effect of such traction when applied to fractures of lower third of femur (A).

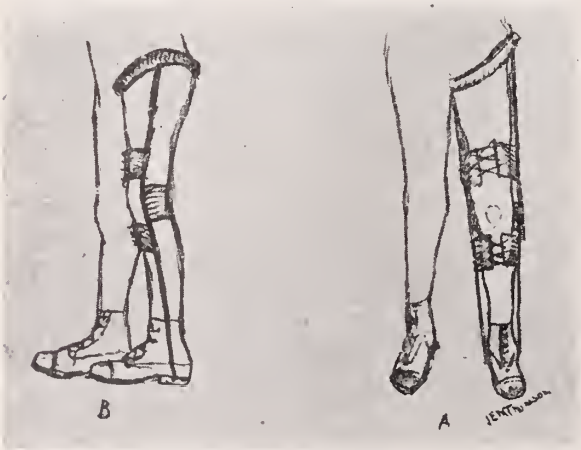


Fig. No. 6—Double lateral iron caliper splint.

When the fracture is of the lower third of the femur, the backward displacement of the lower fragment is extremely difficult to reduce as there is little room for external traction to be applied below the fracture as it is necessary to flex the knee to an angle of 30 or 45 degrees to bring the fragments into alignment. For this reason a pin through the femur or ice tongs just above the condyles gives one an opportunity to apply sufficient traction to reduce the fragments. This traction can be maintained by a Thomas splint with a double inclined plane attachment; or the traction can be imbedded in a plaster of Paris spica cast. We have found, however, that the Thomas splint serves as an adequate measure for treatment of this type of fractures, as in the splint the tongs or pin traction can be readjusted as necessary. After four weeks the tongs or pin can be removed and a spica cast applied. After eight weeks physiotherapy should be instituted and the patient placed in a double lateral iron splint as in other fractures of the femur.

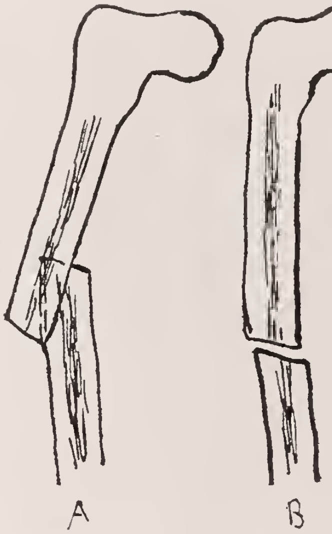


Fig. No. 7—(A) Fracture of shaft of femur—with a common deformity reduced (B) by early adequate traction exerted in proper direction.

We believe that by the use of physiotherapeutic measures, such as baking, massage, passive movement and muscular training, the period of disability is markedly reduced, and that the final result is more satisfactory. Further, that by perfect immobilization as one obtains from the use of the outlined method, there is less probability of stiff joints and a long period of lameness, particularly in the region of the knee, than one is accustomed to having by any other methods; because if the joints above and below the break are perfectly immobilized, there is less irritation and effusion than when the immobilization is inadequate. Particularly is this true if a joint is near the fracture or has been injured at the time of the accident.

These same principles of treatment apply to simple and compound fractures alike, as the fact that there is an open wound complicating the fracture, makes early reduction and immobilization most imminent to promote not only early healing of the soft tissues, but rapid bone regeneration as well.

SCIENTIFIC KNOWLEDGE LOGICALLY APPLIED IN THE TREATMENT OF ACUTE URETHRITIS.*

Arbor D. Munger, B. Sc., M. D., Lincoln, Nebr.

Science is defined as knowledge, the result of observation, experimentation and reasoning. Scientific knowledge logically applied signifies employment of theories of action in so far as they will produce practical results. In other words, it is the application of common sense to the object undertaken. The first principle of the application of common sense is the ability to see things as they are and to tell of them as they appear, not as one should like to have them. The medical profession would like to have a specific treatment for gonorrhoea, but there is none, and what is more to the point the treatment of the disease will be more successful if the idea of a panacea is given up, and the disease in each case studied and then treated.

The things which we have to observe, experiment with, and reason on in the subject under discussion may be placed under four headings (1) the gonococcus (2) the male urethra (3) the host or individual (4) the various therapeutic agents and measures of application.

The gonococcus is a micro-organism. Its power to resist destruction varies with its environment, not only with the different of the same species, but also with the same organism at different times. To be seen it not only has to be magnified but stained. To be classified it must be stained differentially with Gram's stain and sometimes cultivated and even then its identity may be questioned. It thrives at body temperature. Its natural environments are the epithelial cells of the body, especially the columnar cells of the anterior urethra. This micro-organism penetrates between the cells to the sub-epithelial connective tissue, which it does not penetrate unless the vitality thereof is impaired, as by trauma, etc. The gonococcus duplicates itself every ten minutes. It produces while living anti-bodies which can be found in the blood by means of a complement fixation test.

The urethra in a collapsed condition measures on an average about six inches in length, the size varying with the individual and the size of the penis. During erection the urethra will stretch considerably in length and expand proportionately. This signifies that upon collapsing the mucosa must be thrown into folds, which are in contact with each other. Anatomically it is divided into three parts, the pendulous portion, the membranous, and the prostatic. From the practical standpoint it is divided into the anterior and posterior, this division being due to the compressor urethrae muscle which is under the control of the mind and permits man to void and retain urine at will. The diameter of the urethra varies, the narrowest portion being the meatus, the next narrowest commencing at the membranous urethra. It is formed principally of epithelial cells, the anterior of simple columnar cells, the membranous of stratified columnar and the prostatic of transitional epithelium, but each kind gradually merging into the other. The meatus is a nozzle to give resistance to the semen and stream of urine, so that both will be projected, and in the case of urine so that it will distend the folds of the urethra and keep it clean and maintain the tonicity of the mucous membrane, thereby its power of resistance to disease.

Recognizing that immunity and susceptibility to microbic infection vary with the different individual or host and with the same host at different times, and that this fact must be taken into consideration, we come to the main subject of investigating the pathological condition in the urethra—an inflammation. The causes of inflammation are (1) bacterial, (2) traumatic, (3) chemical, and

---

*Read before the Academy of Medical Science, January 11, 1923.

(4) nervous. Primarily the cause of gonorrheal urethritis, uncomplicated is the gonococcus of Neisser. Causes superadded and to be prevented as causing complications are the various pyogenic organisms, traumatism, chemical, etc. Attacked by an invading organism, the host resists and attempts destruction of the bacteria, with the resultant phenomena of heat, pain, redness and swelling. The means of resistance employed by the host to destroy bacteria are chemotaxis, phagocytosis, and the use of lysins of the serum. The efficiency of chemotaxis, phagocytosis, and the lysins depends mainly upon the reduction of congestion and increased circulatory activity of the attacked area. This being true, then all causes or conditions tending to increase congestion or retard free circulation in the part invaded must be ever in mind so as to obtain through logical reasoning means of systematically avoiding or overcoming the same. Briefly these causes or conditions may be summed up in one word, IRRITATION.

This brings us to the application of the therapeutic measures in a given case of acute gonorrheal urethritis. There is not so much importance placed upon the diet as was formerly thought. There are a few articles to be interdicted, such as highly spiced and acid foods, tea, coffee and most important of all, alcoholics. The hygiene of the patient is very important. He should take great care to avoid sexual excitation. The bowels should be well regulated as constipation increases congestion and is conducive of extension of infection into the posterior urethra, prostate and seminal vesicals. Rest in bed is the ideal treatment at the beginning of the disease. However, there are but few men who will submit to this. Many cases of acute urethral gonorrhoea would spontaneously disappear under complete rest, light diet and the imbibition of large quantities of water. Any violent exercise should be firmly forbidden. The use of water both internally and externally is one of the most important therapeutic measures in combatting gonorrhoea. The patients are requested to drink from twenty to twenty-five glasses a day. The rational of this procedure is self evident. It is one of the best methods at our command for irrigation of the urethra, in fact it is the only method of irrigating the urethra which is not fraught with danger. The external application of water is usually carried out by immersing the penis in a container, such as a pint cup, filled with hot water at about 120 degrees F. The water should be changed as soon as cool. Each bath should last fifteen or twenty minutes and be repeated every hour in those cases presenting painful erections, phimosis, paraphimosis, oedema of the prepuce, meatus and dysuria. Next in application should be the sound surgical principle of free drainage. Poor drainage causes congestion and reinfection. There should be no constriction of the urethra as so often occurs with the ordinary suspensory. The meatus should rest lightly into a sac padded at the bottom with cotton. This should be changed at least every two hours.

The internal administration of drugs has become almost obsolete and rightly so. The various balsams, copaiba and sandal wood oil, which have been heralded so long have rarely accomplished anything and have often done great harm by producing renal and gastric disturbances. Their use should be strongly discouraged, as they are never indicated. If the patient complains of burning during micturition the urine should be made alkaline. Acriflavine internally may prove to be an adjunct in a more speedy alleviation of the infection, it does seem to retard the incidence of secondary infection but seems to have little effect upon gonorrhoeal invasion.

The ideal treatment for local use would be one highly gonoccidal, markedly penetrating, non-irritating and non-tissue toxic. Unfortunately, as yet we have no such drug. Before entering upon the discussion of local treatment, the rational of this form of treatment must be considered. Let me briefly recapitulate concerning the pathology of the disease. It must be remembered that we are dealing with a local infection. The invading bacteria lie on the surface of the mucous membrane and in the sub-mucous layer. Folds of the mucosa and glands harbor the gonococci which are held prisoners in these folds, glands and their ducts. Two processes must be put to work here—a process of destroying the bacteria on the surface and a penetrating process by which the bacteria of the deeper layers are destroyed. The blood reaction or leucocytosis is the factor of importance in the latter process. This leucocytosis or phagocytosis is aided by the stimulating effect of the medicament introduced through the urethra. It is important to consider the intensity of the inflammation when beginning local treatment, because if injections are started too soon in the hyperacute type, the symptoms are aggravated, frequently causing extension into the deep urethra, prostate and seminal vesicals. It would be better to state, probably, that there should be no local medication except boric acid solution or hot water until all acute swelling of the mucous membrane has subsided. When the proper time comes for the beginning of local medication great care must be taken to avoid the use of any drug which has an astringent action. To this end may I go on record against the much used potassium permanganate treatment in acute gonorrhoea. There is no drug which will tend to promote a urethral stricture to quite the same extent as this drug. The silver salts have long been known to have, as nearly as it is possible to obtain, a specific germicidal effect upon the gonococcus. Various mercury salts have more recently been introduced in combination with readily penetrating dyes. All of these have their advocates and have been tried out experimentally as well as clinically. Various combinations of silver and albumen are upon the market. Albargin gives, on the whole the best results and I have come to use it almost exclusively. Protargol is next in efficiency. Argyrol is not recommended, inasmuch as it has no penetrating power, is very weakly germicidal, and has very little stimulating effect. I have been recently employing albargin in the form of a semi-solid or ointment, of the desired strength, which melts at body temperature. The base of the preparation is gelatin and tragacanth, with a small amount of glycerin for hygroscopic influence. This method of urethral medication has the advantage that a quantity of the semi-solid material will cling to the folds of the mucous membrane while a liquid is expelled as soon as the meatus is released. A greater efficiency from the medication is obtained in this manner because of the prolonged bathing of the inflamed tissue.

Thus far the vaccine treatment of acute gonorrhea has been a failure. In the light of our present knowledge of the biology and chemistry of the gonococcus, probably we can explain the failure of vaccine therapy. More exactly, this is due according to Warden to the autolysis of the gonococcus "which renders immunity response of animals and men to injection of the organism unsatisfactory and incomplete."

Some of my views, I realize full well, are reactionary and may not be shared by others of the profession, but this paper represents my present status from my own observation and experience. I feel that nature's laws are immutable and man's success is in proportion to the correct interpretation of the workings of natural laws, and if the mandates of the physiological and the pathological laws (varying not only with the host but with the invading organism) which eradicate gonorrhoea are not carried out absolutely by both physician and patient, maximum results will not be obtained, for the mandates of these laws give no option, either to physician or patient.

PROBLEMS OF EPILEPSY.*

Harrison A. Wigton, M. D., Omaha, Nebr.

The purpose of this paper is to enlist more interest in a group of men, women and children, numbering over two hundred thousand in the United States alone, many of whom, through sickness, are prevented from being self sustaining. Some of these are quite intelligent and industrious, others willing to work but at times dangerous to family and to the public, and still others markedly deficient in mental equipment. I refer to that group called epileptics.

In the study of the epilepsies we find many problems demanding solution. In the first place it is not determined just what epilepsy is, although numerous things have been suggested as causes for the seizures. Many theories have been advanced to explain what the condition immediately before and during a grand mal attack may be. Still more problems are met with in the management of the case by medical care and by regulation of environment.

Epilepsy affects all classes of society. History shows that epilepsy has respected neither kings nor subjects, neither rich nor poor, and epileptics, like the poor, "always ye have with you." The number is estimated at two or three to each thousand in population which would mean a possible 2500 to 3000 in Nebraska alone and over 235,000 in the whole United States and possessions. Of these,

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

14,937 were cared for by special institutions of various states at the beginning of 1920. (1) The fact that many states provide for part of their epileptics shows that the question warrants careful attention by other states making no special provision.

Ideally, the diagnosis of a disorder should include three factors (a) the syndrome, (b) the anatomical localization, and (c) the disease proper. In the epilepsies, so far, we are only agreed on the symptom complexes or syndromes. The definite anatomical localization is still in question and the nature of the disease is not determined. Writers of various times, even as far back as the seventh century B. C. have described the phenomena of typical epileptiform attacks, but just what the underlying causes may be still remains in a large measure undetermined. We are like the Six Wise Men of Indostan "to learning much inclined, who went to see the elephant, though all of them were blind." Although this little poem of John G. Saxe about the Six Wise Men referred to theological discussions, one readily appreciates its aptness when applied to an unsolved problem in medicine. The surgeon if he is interested in epilepsy at all, sees it from his angle to find if there be a cause which can be removed by surgical treatment; the endocrinologist sees glandular dysfunction; the psychanalyst, emotional conflicts; while the general practitioner, the neuropsychiatrist and internist have numerous other points of view. The difficulty lies in making a "composite picture" of these many views.

The most common syndrome of the epilepsies is grand mal or haut mal and this is the group of symptoms commonly recognized by the laity as epilepsy. The syndromes of petit mal, larvated epilepsy, sensory types, epileptic vertigo, epilepsy complicated by insanity or feeble minded states, epilepsies symptomatic of other disorders, all of these are definite types, but not so easily recognized. What, then, is there in common between the different groups each of which we call epilepsy? We might answer, recurrent attacks of unconsciousness, with sudden onset and without apparent cause. Any attack of unconsciousness without some explainable cause should arouse our interest and our suspicions. If unconsciousness is a prime factor, the Jacksonian form may for the time be left out of the discussion. The field may be still further restricted by cancelling for the present such epileptic syndromes as have a known cause, as brain tumor, gross injury to skull and meninges, with hemiplegias or monoplegias. There may be added groups manifesting certain psychic disorders accompanied by lapse of consciousness only. These types may not have any motor symptoms.

The grand mal attack may be preceded by an aura, physical or psychic. The same gesture may always be made or the same words spoken at the moment of falling. Hallucinations, perhaps of a terrifying nature, such as seeing the devil coming at one with a pitchfork in his hands, may occur and the fall happen just as the pitchfork is about to enter the body, or there may be time to commit some insane act before the seizure begins. Consciousness and memory are lost just before the cry is emitted. After a brief tonic spasm, clonic convulsions supervene which may vary in duration and severity. Then for a considerable time the patient may lie in coma, then semi-coma and later pass into a state of automatism, during which, acts may be performed of which there is no recollection later. Petit mal consists of momentary loss of consciousness and memory. After recurrent attacks there may develop considerable deterioration, or perhaps the syndrome may change to that of grand mal or of psychic equivalents. The epileptic insane are frequently the most dangerous types of insanity. Their subconscious impulses require that they be kept in hospitals for the insane.

A given case may present a picture of grand mal at one time and petit mal at another. Or he may have short attacks of grand mal with long intervals between, and then go into a series of convulsions or status epilepticus. Psychic manifestations such as delirium, mania or automatism may occur with some seizures and not with others. There may be "absences," short periods of automatism with amnesia. The history of a previous epileptic attack will usually differentiate this from the hysterical manifestation.

The epileptic personality between attacks shows several important deviations from normal. When some mental retardation exists, his attitude toward others is noticeably childlike, with an unusual desire for approval and praise and showing persistence amounting really to stubbornness. Sometimes moodiness or a hypomelancholy prevails. Another may show a morbid piety. Another may fly into a violent passion at the least opposition.

Slowness in thinking is characteristic of the chronic cases, so much so that it has been called molasses-in-January type of thinking.

The anatomical localization of this disorder is not so definitely determined as the syndromes. Gross organic changes in the central nervous system either favor or directly cause convulsions of the grand mal type. Tumors in the temporo-sphenoidal lobe in particular produce a symptomatic epilepsy which MacRoberts and Feinier (2) believe is due to interference with the arterial circulation to the cortex.

Internal hydrocephalus is found at autopsy in many cases. It has been shown by Fritsch and Hitzig that a strong galvanic current applied to the surface of the motor area causes powerful muscular contractions. These may go on to typical epileptiform attacks with complete loss of consciousness. Direct chemical irritation to the cortex under certain conditions will do the same.

In a series of a hundred late cases of severe head injury reported by Michael, (3) thirty-six developed some form of epilepsy. Twenty-one of these were grand and petit mal type. In most of these cases there was unconsciousness at the time of injury.

Other symptomatic epilepsies may be caused by encephalitis, meningitis, arteriosclerosis, senile changes, infectious and toxic agents.

Recently Elsberg and Stookey (4) have reported experimental work on adult cats by injection of essence of absinth into the femoral vein, following which one or more severe convulsive attacks occurred. They also obtained the same results by temporary clamping of the innominate and left subclavian arteries. They were able to prevent convulsions after this procedure by allowing normal saline solution or Ringer-Locke solution to circulate through the vessels of the brain during the time of the cerebral anaemia. When the normal control of the higher centers over the more primitive nerve structures is lost as in a decapitation, clonic convulsions occur which may last for some time. These spasms are epileptiform in character.

Some would localize the disturbance in the cortex or sub-cortex; others, in the brain stem, while still others would look for fundamental conditions outside of the nervous system but affecting the higher nervous centers by vaso-motor reactions.

Is heredity a prime requisite for the development of epilepsy? The consensus of opinion seems to be that epilepsy need not be present in parents but that some neurotic traits are usually evident. Psychopathic inferiority, nervous disorders, chronic alcoholism, or genius may be found in one or both parents. The Mendelian law apparently holds good in regard to epilepsy as a recessive tendency. Various writers give heredity as a definite factor in from 50% to 60% of all cases; while others, notably Dr. W. T. Shanahan, put the figures very much higher.

Syphilis is not found as frequently as one would expect. Reports from various institutions in this and adjoining states indicate from 2% to 9% with evidence of lues. This does not necessarily prove syphilis to be the causative factor in every such case.

Through the cooperation of Drs. Charlton, Fast, Griffith and Stewart, superintendents of the Nebraska State Hospitals, I can report that of a total of 3,714 inmates there are 287 epileptics insane or feeble-minded or 7.7% being cared for by the state. In practically all insane epileptics the epilepsy preceded the psychosis.

From information furnished by H. M. Pollock, statistician New York State Hospital Commission, and Edith M. Furbush, statistician National Committee for Mental Hygiene, one learns that approximately 3% of the first admissions in the civic state hospitals are cases of epileptic psychoses and that all of these had epilepsy prior to the onset of the psychosis.

Dr. Hubbard, superintendent of the Colony for Epileptics at Parsons, Kansas, reports 540 epileptics with a total admission for the past year of 67.

Dr. Voldeng, superintendent of the Colony for Epileptics at Woodward, Iowa, reports the total number of epileptics as 385, of whom 62 were admitted in the past year.

The Craig Colony report gives 276 patients admitted in one year. Of these over one-fourth became epileptic in the first three years of life. One-third became so in the first five years. The age at which the greatest number was admitted was from fifteen to twenty years. Dr. Shanahan, the superintendent, gives an average life expectancy of thirty-six, much less than the usual life expectancy of all classes. The duration of the disease averages from twenty to twenty-five years.

At the Dispensary of the University of Nebraska, College of Medicine, after the diagnosis of the syndrome is agreed upon, an effort is made to rule out the various causes of symptomatic epilepsy. A negative blood Wassermann and spinal fluid test clears up lues in the absence of definite neurological findings of the meningo-vascular, gummatous or paretic types. Brain tumor, focal infections with serous meningitis, endogenous or exogenous toxic states or glandular dysfunction are searched for. X ray of sinuses and teeth occasionally reveal troubles which, if not the cause of the disorder, are at least contributory to the frequency and violence of the seizure. Requests for X ray of the head for suspected fracture are not uncommon but I do not recall that a fracture has yet been found to account for the convulsions. Having found no adequate organic cause for the epileptiform convulsions, psychogenic factors are investigated. Social service is of great value in this.

In the matter of treatment, attention is directed to elimination by means of magnesium sulphate or sodium phosphate in moderate doses. The diet is regulated and the meats temporarily stopped. As a rule the patient is eating twice the normal amount of food and it is safe to cut the total intake of food one-half. Some definite routine of outdoor work is planned if more exercise seems indicated. Hydrotherapy in the form of warm baths at bedtime may be advised.

Phenobarbital (luminal or gardenal) has been used with considerable success. This drug was introduced by Hauptman in 1912. Bromides are not entirely discarded by any means, but luminal seems to control the attacks more uniformly and without the depressing effect of the bromides. The average dose is a tablet of 0.1 Gm. (1½ grains) of luminal to be taken at bedtime. Exceptionally one tablet twice a day needs to be given before the seizures are controlled. The actions and uses of luminal-sodium are the same as those of luminal. The dosage is 10% greater. This preparation being soluble in water may be given hypodermically. In suitable cases, thyroid gland or pituitary gland may be given with advantage. Caffeine may be used with luminal, as also may atropine or belladonna when indicated.

Another treatment recommended by various writers is the use of tartrate borico-potassique. Adrenal extirpation also has been advocated but the reports are not encouraging. Most of the surgical measures attempted from time to time have failed to get results lasting more than a few months. The benefits of the starvation treatment are not yet determined. X ray treatment of epilepsy is based on the possible association of idiopathic epilepsy and status lymphaticus. It is suggested that exposure of the thymus and spleen to the X ray would check proliferation of lymphoid tissue.

Are the bromides of value or should they be discarded in favor of phenobarbital? The temporary use of bromides to measure the severity of seizures and the tendency of recurrence is worth while. A case that does well temporarily on 15 grains of bromides three times a day generally requires 1½ grains of luminal at bedtime. Less sluggishness and stolidity appear after luminal or luminal-sodium than after the bromides. When under a moderate dose of luminal, dizziness or drowsiness persists, caffeine is recommended.

An effort should be made to increase the patient's interest in some work and to improve his mode of living. If in recent years great improvement has been made in the medical treatment, one should keep in mind the futility of giving medicine without improving the patient's physical and social environment at the same time. If his interest can be aroused in someone else, someone who needs his help, the number of attacks become less frequent. I have in mind a young man with epilepsy associated with a diplegia. When he was made responsible for the care of a blind man he took great pride in this duty. It was noticeable that his seizures were further apart and his disposition improved. His sphere of influence was enlarged and he took pride in his responsibility. If on the other hand, the responsibilities of such a one had been extended too much, if he were removed from an institution in the attempt to have him make his own way in the world, he soon would be overwhelmed by the great odds against him and the seizures would have become frequent and more severe.

Treatment for the epileptic insane and feeble-minded is not identical with that for the non-insane. The first two groups require hospital care for the protection of themselves and the public. The epileptics not insane, need a colony where the environment is made most favorable for them to work if able to do so.

Institutional life thus may become a great boon to the average epileptic. The handicap he is running under is enough to prevent him from earning his own living but not great enough to destroy his usefulness under favorable surroundings. Should we not take unto ourselves the responsibility of providing this favorable environment? Why should we say that we will look after the epileptic who becomes insane or who is definitely feeble minded and think not at all of the one, who, with a little help could be of considerable value to himself and others? Can you picture the discouragement that must come to him who, willing to work, loses job after job because of occasional attacks, when he is capable of working nine-tenths of the time? No private individual cares to stand this one-tenth loss, but the state can well afford to provide suitable work for such a man. Although handicapped, such a one, buoyed up by a little state help, could keep afloat, when alone he would soon sink in the great sea of individual competition.

What then can we do? We the medical profession of Nebraska can devote our energy to the end that a suitable colony for epileptics be established and that in the near future. This is not a visionary project for other states have shown what can be done.

Ohio in 1890, thirty-three years ago, established a colony for epileptics, New York followed in 1894, and other states have established colonies from time to time, among them Kansas in 1903, and Iowa in 1914. In what year shall Nebraska fall in line?

It is not what we selfishly create for ourselves that lives after us but rather what we unselfishly build for others.

BIBLIOGRAPHY.

1. Pollock and Furbush, Mental Hygiene, Jan. 1921.
2. J. A. M. A., Feb. 19, 1921.
3. J. A. M. A., Apr. 14, 1923.
4. Archives of Neurology & Psychiatry, May, 1923.

DISCUSSION.

CHAS. E. REMY, M. D., Norfolk: I feel that this paper should not be passed without comment. In fact I think marked compliment should be extended to Dr. Wigton upon the care with which it has been prepared.

Every specialty undoubtedly has a tendency to feel that the world revolves around itself as the central sun. But there is no one thing in any specialty which is of more interest to all, nor which all come into contact with more often, than epilepsy.

The doctor called attention to the fact of psychic disturbance in practically all cases—at least in the great majority of cases of epilepsy. In my work I come into contact with them only after the psychosis has developed. But from that very fact I am inclined to feel that if the general practitioner posted himself a little more thoroughly in regard to epilepsy and its treatment, many of these cases would never come to us at all. The very fact that these cases in which a psychosis has developed, can, under proper care and treatment, in a period of a few months or a few years, be returned to their families perfectly sane, would seem to illustrate that fact.

One other comment I would like to make. I was unfortunate in getting in late and I do not know if the doctor touched upon the so-called cerebellar type of epilepsy. In this type we get the epileptic attack replaced by dizziness. We have at this time in the Norfolk State Hospital, one patient whose affliction had been diagnosed as various forms of insanity, and concerning whom I wrote his family in the east nearly two years ago that we were not expecting him to live. We got a letter back from a brother stating that the patient's death was the least thing with which the family was concerned. He went on to say in his letter that the patient had always been a drunkard—was always staggering around and having to be picked up out of the street—and they did not care what became of him, or where we buried him. And this patient is one of the finest men in the institution—a man of kindly heart and charitable impulses—a man more sinned against than sinning. He has attacks of dizziness which do simulate very closely an ordinary 'drunk'—he gets extremely drunk. We worked out this case quite carefully and became convinced we had a case of epilepsy to deal with. After making our diagnosis we were so fortunate as to learn from other institutions in which he had been a patient in his younger days, that earlier he had shown actual epileptic (convulsive) attacks, which we believe proved our contention.

I mention these cases because I think you may come in contact with them. I do not believe they are as unusual as may have been thought—they merely pass unrecognized. You may come in contact with them and be able to rectify what would otherwise be most unjust criticism of some individual.

There are two other things I should like to mention in connection with this paper. In Dr. Wigton's manner of treatment he mentioned luminal, which we think very highly of. In this I do not believe with the doctor that the dose can be absolutely fixed. (A fixed dosage to be used the same for all cases.) I think there is only one way to fix the dosage in connection with epilepsy, and that is: to find what dosage you can give that particular case at night—no other time—so that the case will not be drunk the next day. Whatever the dose is, give it. If he is dizzy the ensuing day from one grain come back with half a grain. If he can take seven and one-half grains of luminal without being drunk the ensuing day give seven and one-half grains each day at bedtime. We much prefer the luminal-sodium preparation to the straight luminal, owing to its solubility in water, and the consequent greater convenience of administration.

I should like to mention one other little thing which came to us, not through the particular care of our investigations, but purely by chance. It is the assistance sometimes given by simple measures such as an enema. We had come to us nearly two years ago, a boy of nineteen who had severe attacks of epilepsy—a series of from fifteen to twenty seizures at an attack. He told us after he had been with us a month or so, that his father had been accustomed to stop them by the use of an enema. We tried it and found the story true.

Since then we have used the enema not alone in this case, but in many cases, and find it is of marked assistance in stopping the immediate series of seizures. If any of you have read of the work of Dr. Cotton a few years ago relative to the cure of epilepsy by picking up the appendix and irrigating the colon through it, you will realize that we were doing the same thing he did, in a simpler way. Dr. Cotton's cases were not cured. Unfortunately he had to report four years later that those cases were again having epilepsy after the appendix had been closed up.

H. W. BENSON, M. D., Oakland: I think Dr. Wigton's paper is of so much importance and such a valuable thing to the man in general practice, that it should not pass without a little more discussion. Dr. Wigton, I take it, is discussing particularly the type which we used to call "idiopathic epilepsy." The first thing to do is to find out, if possible, the cause. You rush into the country to see a case. You may find anything in the way of a convulsive seizure. The first thing is to find out the cause. The second thing with us is to know what to do in some of these emergencies. I will say if you run against a case of serial epilepsy, you have a job on your hands!

Dr. Wigton perhaps did not touch on everything he might have touched in connection with the treatment. Twenty years ago we used to soak them with hyoscin hydrobromid to the point of ten respirations per minute, and keep them alive with oxygen. We also found chloroform judiciously administered over perhaps half an hour helps a great deal.

I think all of us would like to know what to be able to do in chronic epileptic cases. I wish some one would tell us. Personally, I find the judicious use of luminal has had no bad effect. Magnesium sulphate is a thing often overlooked. It has been forgotten by lots of men. I think it is one of the most valuable things that can be given either to the chronic or acute type. If you can not give it in any other way, give it by hypodermic.

I am glad to have Dr. Wigton present this paper, and I hope the others present may get as much out of it as I did.

H. A. WIGTON, M. D., Omaha: I certainly appreciate having two men discuss this paper who have such large institutional and general experience as have Dr. Benson and Dr. Remy.

We tried to cover in this paper some of the more important points which we thought would be of interest. Other points not previously mentioned have been brought out in the discussion, for example, the cerebellar symptoms. In our dispensary work we have had a case or two that simulated Meniere's disease which showed the typical epileptiform type of personality. I remember also a case at the Norfolk State Institution in 1901. We would sometimes send him with a bucket for water. He would get a lateropulsive attack during which he would run in a circle to the left. When he was through with the seizure, he would still be standing, but all the water in the bucket would be gone. Some of these syndromes are of particular interest for study.

When I mentioned 1½ or 3 grains of luminal, it was from the standpoint of the general practitioner and of dispensary work. I believe it is bad to give a large dose unless you have your case under close observation in an institution. That is why I sometimes start treatment with bromides. I have had one or two not serious conditions, but rather unpleasant reactions due to idiosyncrasies to luminal. In the dispensary, therefore, we do not like to give a big dose of luminal, but sometimes do so providing the patient is under special supervision.

I did not recommend hyoscin because I have seen some bad results from its use.

There are a good many points of treatment such as regulation of the bowels and the use of magnesium sulphate which need to be emphasized. Magnesium sulphate is also of great value in the maniacal states as well as in pain conditions. We will have more use for it in the future, especially in institutional care of epileptics.

CHRONIC INFECTIOUS ARTHRITIS.*

Lynn T. Hall, M. D., Omaha, Nebr.

(From the Department of Medicine, University of Nebraska, College of Medicine.)

Chronic joint diseases have always offered difficulties from the standpoint of etiology and experimental study as well as from the viewpoint of treatment. There are always cases of this character in the practice of all physicians doing work, outside of certain specialties, and in the wards of any hospital; particularly in those of the general and charitable class.

They represent, in most instances, the result of previous treatment or lack of treatment, that was no doubt, inadequate, if not careless and inexcusable.

During the past year, in the medical service of the University Hospital, Omaha, there have been 16 cases of chronic infectious arthritis. In the conduct of these cases, various methods of treatment have been employed, and laboratory studies have been made to determine the etiology, foci of infection, and possible metabolic reasons for the disease.

While we have nothing specific to offer for the cure of this all too frequently occurring malady, our studies have suggested a discussion of the various means by which this disease may be prevented, or later improved, if not cured.

---

*Read before the Omaha-Douglas County Medical Society, May 22, 1923.

A useful classification of the inflammatory arthritides, for clinical purposes, as suggested by Barker (1), follows:

(1) True chronic gouty arthritis.
(2) Primary hypertrophic arthritis.
(3) The secondary chronic infectious arthropathies following various bacterial invasions.
(4) So called primary chronic progressive polyarthritis.

Special conditions, viz:

(a) Chronic villous arthritis of Goldthwait.
(b- Still's Disease.
(c) Chronic arthropathies of the spine.
(d) Heberden's nodes.
(e) Subcutaneous fibroid nodules.

Gout is a metabolic disease of unknown etiology, occurring in middle life, and is almost uniformly associated with an increased amount of uric acid in the blood, and in long standing cases, with uratic nodules, in the subcutaneous tissues, or in and about the joints.

Primary hypertrophic arthritis may have the same etiology as other forms of arthritis but is typified by its involvement of one of the larger joints of the body, atrophy of cartilages, roughening of joint surfaces and lipping of the joint surfaces and joint margins, without other disturbances of health.

Chronic progressive arthritis may in a sense, be considered as a metabolic disease if all foci of infection can be removed from consideration.

Still's Disease is a juvenile type of chronic infectious arthritis which differs but little from the adult arthritis.

Heberden's nodes are expressions of overgrowth in the small joints of the hand and mean that the factors which produce infectious arthritis, have been present.

Chronic infectious arthritis includes, excepting acute rheumatic fever, most of the cases of febrile acute, non-traumatic arthritis and can be referred to a focus of infection somewhere in the body; possibilities for such sites, being in the tonsils, accessory sinuses of the nose and skull, the teeth, gums, alveolar processes of the jaw, mouth and pharyngeal mucous membrane, eye, ear, nose, appendix, gallbladder, bowel, genitourinary tract, and even the skin.

In this paper, we are referring to this latter type of joint disease; viz, a chronic infectious deforming arthritis. The investigations of Billings(2-3) and others, confirm the present view of many physicians, that arthritis is an infectious disease, generally caused by strains of streptococci, which are usually non-hemolytic and of low virulence, and occasionally by staphylococci and by nonpyogenic strains of gonococci or other bacteria. The bacteria reach the joints through the blood stream, lodge in the small vessels of the periarticular tissues, the terminal vessels of the serosa of the joints, without forming a purulent exudate and may enter the nutrient artery supplying the epiphysis of the bones.

The result of the bacteria in the blood of the host is dependent upon the virulence of the same and on the number of bacteria in the blood stream. The resistance of the host may be diminished by exhaustion, debility from overwork, starvation, infectious diseases such as pneumonia, typhoid fever, erysipelas and puerperal infection. The severity of the joint infection depends upon the virulence of the bacteria, and the number which reach the tissues of the joint. The deformity is generally due to bony overgrowth, tucking and contracture of the capsule and tendons, overaction of the flexor muscles, hyperextension, muscular contraction, and even fixation, which is almost immobilizing to the joint. All these are produced by infection.

The progressive character of the disease is explained by the persistence of the etiologic foci, through failure of eradication or failure to locate or to apply treatment to correct tissue defects. Jones and Jones (4) emphasize the importance of fibrositis as the underlying and characteristic phenomenon of this disease and that it is fibrous tissue which is primarily concerned in these conditions, whether in the muscle, nerve, cartilage or bone.

The clinical picture depends on the point and degree of advancement of the disease but when this is well established, the patient is more or less bed-ridden, knees, shoulders, and ankles have limited motion, the knees are enlarged, the hands show irregular swelling of the knuckles and interphalangeal joints, the wrists are almost ankylosed and there is pain on motion and even at rest.

Significant advances have been made in the treatment of this sub-variety of arthritis and the relegation of patients suffering from this disease to the class of "Hopeless Chronics" has been practiced too often by many conscientious, yet less painstaking physicians.

TREATMENT.

1. Steps to remove or combat the focus of infection.

(a) Teeth. Too much emphasis cannot be placed upon the importance of having cases studied by the dentist and roentgenologist in the most thorough manner, for foci in the mouth may exist, which appear trifling on their own account and yet may be productive of serious consequences.

(b) Tonsils should be subjected to more than mere inspection, as relatively trifling crypts may harbor necrotic material, which acts as culture media for bacteria.

(c) Ears should be examined by one trained in this line of work.

(d) Accessory-sinuses should be studied by inspection and by the X ray.

(e) Appendicitis, bowel disorders and gall-bladder diseases should always be eliminated as possibilities.

(f)) Sir Arbuthnot Lane (5) suggested the origin of arthritis to be in the anatomic aberrations of the bowel and Smith (6) has reported benefit following ileocostomy and even colectomy. This latter treatment, is of such severity as to make its general application extremely limited. Practical therapy may be directed toward assisting the function of the bowel by the use of petroleum, cascara, agar-agar, (when sprinkled over food or given in the form of Mansfield wafers, frequently stimulates peristalsis, by its property of absorbing water and thereby increasing intestinal content and bulk). Abdominal support is useful where there is weakness in the abdominal wall and ptosis of the viscera.

(g) The genito-urinary tract may conceal a boggy prostate gland, a low grade infection in the seminal vesicles; or in women, in the purulent discharge from the cervix or an involved Bartholin gland. All of these, if present, should receive vigorous treatment.

(h) Buckley of London says that the origin of infection in cases of chronic infectious arthritis will be found in the mouth, throat or naso-pharynx in 95% of cases.

II. Dietetic. Fletcher(8) has pointed out that the relationship of sugar tolerance to the effect of reduction in diet showed that the response to reduction in diet is proportionate to the reduction of sugar tolerance. It is thought that in a case with low tolerance one may expect to offer good prospects for improvement. Carbohydrates and proteins should be administered with the patient's well-being as a guide, adhering to bread, water, sugar, milk, roast meats, fish, rice, potatoes. The injurious matter which reaches the tissues is most frequently of carbohydrate or protein origin.

III. Vaccines and foreign proteins have had much exploitation in recent years in the treatment of the various arthritides. Vaccines act in these low grade infections by stimulating the system to an increased defensive, which overcomes or checks, in turn, the development of the organisms. Obviously, it should follow that the exhibition of these products should not be manifested in acute and overwhelming infections. The determining of dosage should be done by producing a reaction, characterized by fever, chilliness, malaise, headache, and a possible exacerbation of all symptoms followed by relief. The reaction should be marked, but not so great, as to embarrass the condition of the patient. Theoretically, an autogenous vaccine is the one of choice. However, on account of the difficulty of determining the causative organism in this disease in many instances, and because of the time consumed while awaiting its isolation, a polyvalent stock vaccine may be employed. Buckley (7) has reported some favorable results following the use of stock vaccines, especially when accompanied by daily doses of thyroid gland extract. There is no uniform dosage recommended, but the initial dose of 500,000,000 killed organisms should be given until a reaction is secured. The interval between administrations is generally one week. If benefit is not apparent in a reasonable time the vaccines should be abandoned.

Foreign proteins in various forms have been given with some success as reported by Miller and Lusk (9) and by Jos. Eidlesberg (10). Solutions of proteose and typhoid vaccines were used by the former and milk by the latter. Arthritides of various types have been treated by the author using foreign proteins including horse serum, anti-meningococcic serum, typhoid vaccine, bacterial filtrates, phylacogens and milk.

We have seen some very striking results follow this type of treatment, in gonorrhoeal arthritis particularly. On account of the lack of specificity, our inability to explain the nature of the reaction, and the fact that the attack is more or less a stroke at random, the treatment is discredited by careful medical men. Deleterious effects, such as mild inflammations of the kidney have followed the use of foreign proteins given in this manner and for this condition(20).

IV. Glandular Therapy. Volumes have been written upon the influence of the endocrine glands upon metabolism and arthritis. Thyroid extract has been used as reported by Buckley (7), Pemberton (11) and Lamarque(12). However, the work of Cecil, Barr, DuBois, Soderstrom and Mageil (13) does not indicate that arthritis deformans is a disease of metabolism and that it is not accomplished by an increase in the metabolic rate.

None of our cases showed an increase in the metabolic rate. Tachycardia and nervousness occur if thyroid extract is continued for some time and these results may overcome any good that may result from its use. Various writers (14) advocate the use of thymus gland but its usefulness has not been conclusively shown. We saw no apparent results from its use in half of our cases.

V. Medication. Iron, strychnine, and tonic drugs are frequently used with some benefit to maintain health at a point where discomfort is reduced materially. Arsenic in the form of Fowler's solution 1 to 2 minims t.i.d.p.c. or 1-2 of a grain of cacodylate of soda, frequently improves anemic conditions which accompany this disease. Colchicum and lithium are little used and of little avail. The salicylates, aspirin, atophan, cinchophen and pyramidon are useful but of limited value. They relieve pain very materially but continued over long periods are apt to interfere seriously with digestion.

Iodine and iodides have been used in arthritis with indifferent success for many centuries. However, sodium iodide as pointed out by Osborne (15) is preferable to the other preparations. Its usefulness has been reported by Elmore (16) and others. We have recently employed this drug in our series of sixteen cases of chronic arthritis of presumably streptococcic or gonorrhoeal origin, with apparent benefit in some way in every instance. A stock solution was made, adding the sodium iodide to freshly distilled water, in such amount as to make each cc. of solution represent from 2 to 2½ grains of sodium iodide. The solution is filtered and sterilized and administered in 15 to 20 cc. amounts intravenously, on every second day, taking the usual care incident to intravenous therapy and giving careful attention to putting every drop of the solution into the vein on account of the irritating character of the drug. There was no reaction produced in any of our cases and in nearly every instance a rather marked abatement of the symptoms, chief among which was pain, followed. We have felt that this drug has afforded greater relief than anything we have used up to the present moment.

Sulphur in 1% solution recommended by Meyer Bisch and as reported by Weskott (17) used intragluteally, was not without considerable pain and unsuitable. Caseosan and yatren casein give better results without the unpleasant complications. Aubertin (18) reports some relief from pain by injecting 33 micrograms of thorium X into the muscles each week. This drug has relieved pain but has apparently lowered the resistance of the body to infections, lowered the number of leucocytes and only afforded temporary relief.

VI. Elimination. Free elimination is indispensable to assist in ridding the body of toxins. Free action of the bowels should be maintained without vigorous purgation and depleting. Water should be taken freely. Free diaphoresis by the use of baths, electric pads, cabinets and therapeutic lamps, is of much benefit, if persistently employed but should not be used to the point of exhaustion.

VII. Local Therapy. (a) Heat applied as above mentioned, gives great relief, if not used to the point of exhausting perspiration. (b) Medicinal Applications. Counter irritants give temporary and subjective relief and may be applied with benefit. Methyl-salicylate ointment, iodine ointment, guiacol ointment, iodine petrogen, mesotan, and any counter irritant of the many of our pharmacopea may be used. One should always avoid injury to the skin by too frequent or too vigorous application.

(c) Massage, passive or active motion. Many clinicians apparently hold to the view that they should avoid further irritation on an already inflamed joint. However, we feel that much damage is done to this type of patient by the all too frequent practice of immobilizing the joints, by protracted application of casts, thus increasing the fibrositis, shortening the tendons, producing an atrophy of the muscles from disuse and an almost if not total immobilization of the joint. The chronic character of the disease and the fact that the pain can be effectively relieved would seem to argue for the irritation incident to all efforts that might be directed with caution, to maintaining function, preserving nutrition, and postponing ankylosis and immobilization.

Massage is invaluable in restoring atrophic muscles, if judiciously applied, by the doctor as well as by the nurse. The movement of a joint is as directly dependent upon the ability of a muscle to act, as it is upon a perfectly functioning articular structure. Massage takes the place of exercise, in a sense, and combined with whatever passive or active motion may be instituted, improves the muscular and systemic metabolism. Many ingenious mechanical devices have been manufactured by physicians interested in these diseases and their more progressive treatment, with which to accomplish and promote passive motion. We have seen these do splendid service in a number of our cases, and in those of our colleagues. We deplore, however, the forcible breaking up of an ankylosed joint, under anesthesia. In our judgment, this procedure is always attended with pain and in no instances coming to our attention has done other than damage to the patient.

Rest. This element of treatment is to be employed following periods of more or less activity and if not carried to the point of adding atrophy to the muscles, with more limitation of motion, it is highly beneficial. The supervision of motion, the application of casts, splints, of rest and general management in conjunction with the counsel of a skilled orthopedist, is in many instances, a very desirable and helpful combination.

Climate. Patients suffering from chronic infectious arthritis invariably do better in a warm dry temperature than in localities where there are abrupt changes and where there is much heat, cold and humidity.

Electricity is employed in this disease with considerable good effect. It is claimed by (20) those familiar with this form of therapy, that the various currents available, produce certain beneficial results. Thermic effects of high frequency currents are probably the most marked of the sources of electrical energy. The physiological effect of this heat upon the tissues, is derived from the increase in blood supply. This hyperemia has a tendency to persist with its beneficial effects for a long time. The mechanical effect upon cell structure is due to the thermic effect phenomena and the passage to and fro of active electrons, through the tissues. In these joint involvements, the circulation is thereby improved, metabolism and promotion of elimination of toxic poisons which may have caused or aggravated the condition, is accomplished. The growth of germs is restricted and infiltration is removed by the more active metabolism in the joint structures, by the establishment of active circulation. We have found this therapy a valuable adjunct in the treatment of our cases.

Radium(20) applied, and matter activated with radium added to water has marked effects as observed by Gottleib at the large radium mine at Joachimsthal among miners. Wm. Armstrong of Buxton summarizes the effects as: (1) increased diuresis (2) increased exhalation of carbonic acid gases; (3) lowered blood pressure; (4) decreased viscosity of the blood; (5) increased activity of peptonizing ferments; (6) autolysis; (7) inhibition of pains of joints; (8) solvent action on gouty deposits. We have had no experience with the use of radium in our cases.

SUMMARY.

1. Chronic infectious arthritis is a disease which, if neglected, has serious complications. These may be prevented.

2. The evidence that infection is the cause of this disease is strongly supported clinically by the improvement which follows the removal of infectious foci.

3. Metabolism is only indirectly altered in this disease and does not seem to be an active factor in its production.

4. Relief may be afforded the patient by the application of heat, electricity, radium, massage, splints, casts and extension, and mechano-therapeutic devices employed with caution.

5. Tonic drugs, sodium iodide, vaccines and other foreign proteins and glandular products, have beneficial effect.

6. Forcible breaking up of ankylosed joints is to be deplored.

BIBLIOGRAPHY.

1. Llewelyn Barker: Monographic Med. (The Clinical Diagnosis of Internal Diseases) N. Y. and London, IV, 93 et seg.

2. F. Billings: Acute and Chronic Rheumatism, Jour. Tenn. State Med. Assn., 1916. VIII 205.

3. F. Billings: G. Coleman, W. G., Jour. A. M. A.; 1913, lxi, 819. Chronic Infectious Arthritis, Statistical Report, End Results. Jour. A. M. A. 78; 1097 April, 1915, 1922.

4. Jones, Llewellyn and Jones, A. B. London 1915.

5. Lane, Sir Arbuthnot. The Operative Treatment of Chronic Intestinal Stasis, Ed. 3, London 15.

6. Smith, Rea. Ileocolostomy and Colostomy for Arthritis Deformans. Jour. A. M. A. 1915. lxv, 771.

7. Buckley, Chas. W.: Practitioner, 108, 412, London, June 1922.

8. Fletcher, A.: Archives Int. Med., 30; 106, July, 1922.

9. Miller, Jos. L., Lusk F. B.: The Treatment of Arthritis by the Intravenous Injection of Foreign Proteins. Jour. Am. Med. Assn., 1916, lxvi. 1757.

10. Eidlesberg, Jos. J.: A. M. A. 78; 1788, June 10, 1922.

11. Pemberton: Handbook of Medical Treatment. Vol. 1, 1920. Da Costa.

12. Lamarque, Alex.: Sewana Med. 29; 758 Buenos Aires May 11, 1922.

13. Russel, L. Cecil, David P. Barr, Eugene F. DuBois, G. F. Soderholm and Estelle McGill; Archives Int. Med. 29; 583, May 15, 1922.

14. Nathan, P. W.: Jour. A. M. A. 1911, LVI, 1778.

15. E. D. Osborne: Jour. A. M. A., 79; 615, Aug. 19, 1922.

16. R. R. Elmore. Kentucky Med. Jour. 20; 285. April 1922.

17. Weskott, Munch, med Wochenschr; 69; 674. May 5. 1922.

18. C. Aubertin: Bull, et mem Soc. med Hop de Paris 38; 582. April 19, 1922.

19. R. Pemberton and Car Crouter: Jour. A. M. A., Feb. 3, 1922.

20. R. A. Kinsella: Jour. A. M. A. Mch. 10, 1922.

21. Snow: In Theropeusis of Internal Disease.

22. Wm. H. Aikins: In Theropeusis of Internal Diseases. Fordheim. Vol. I, 1923.

METHODS OF TREATMENT OF AFFECTIONS OF THE ANTRUM OF HIGHMORE.*

A. G. Lueschen, M. D., Columbus, Nebr.

In considering the method of treatment of an empyema of the antrum of Highmore it is of the greatest importance to distinguish between acute and chronic empyema.

The acute stage lasts from four to six weeks. The patient's statement, as to the beginning of the affection, is by no means always reliable, as previously existing chronic empyemas, which have run a latent course, frequently are not recognized by the patient.

In most acute empyemas the rule holds good that they show a marked tendency to spontaneous healing; therefore, expectant treatment should first be employed, or, at least, only cautious measures should be undertaken. Those suppurations of the antrum which are caused by an acute suppurative periostitis at the root of a tooth form an exception to this rule. In these cases the extraction of the diseased tooth and the opening of the antrum from the alveolar process should be performed without delay. By far the greatest number of acute empyemas of the antrum arise, as is known, in consequence of an influenza or a cold in the head. They may also follow any of the exanthemata. In these cases the pain during the first few days may be considerable.

Neuralgic pains in the region of the second and also the first branch of the trigeminal are almost the rule, and these symptoms urgently demand relief. Experience shows that phenacetin in half gram doses, administered two to three times daily, is capable of lessening the pains essentially. A most excellent remedy to begin with is aspirin and rest in bed. If this does not relieve the pain I try to irrigate the cavity through the natural opening, which sometimes is very successful. If, however, it fails to give relief, I then make a puncture through the wall in the inferior meatus and irrigate the antrum with a large quantity of warm, weak boric acid solution. In numerous cases of severe acute empyema of the antrum I obtained a cure after making two or three punctures with irrigations of weak boric acid solution and in two cases I treated just recently, one single irrigation did the business. In all acute cases the trouble disappeared a short time after the irrigations. The secretions became scanty and more of a mucous nature, until in a few days complete and permanent healing resulted. During the last three months I had two cases of very severe mastoiditis following a severe acute antrum infection. In the one case it arose immediately after the extraction of a tooth (second bicuspid) and in the other it appeared on the second day after the antrum became acutely involved. No antrum operation was performed.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

If there are no special indications present in acute empyema it is best to let the patient rest in bed a few days, and administer one to two grams of aspirin daily. I may say that the majority of cases are cured by this simple method. Energetic operative measures during the first week of acute empyema cases are not necessary, unless it is impossible for the patient to remain under observation or on account of profuse suppuration we may have to take some measure by which the patient may expect a speedy recovery. We will have to make an artificial opening at some point, so that the patient may be able to irrigate the cavity once or twice daily.

If a decayed root of the second bicuspid or molar tooth is present, and if no direct contraindication against the opening of the alveolus exists, I believe the opening should be made here in the proper manner. On the other hand, the teeth being sound, then I would consider nothing less than an operation through the wall through the inferior nasal meatus, or possibly, if for any reason this is not advisable, a small opening in the canine fossa under cocaine anaesthesia. The patient may perform the irrigation himself.

A most important question is, how long shall we wait in an acute empyema of the antrum of Highmore until we decide upon operative procedures? Of course, this depends upon the individual case in general, however, three weeks is the period within which an acute empyema is apt to heal spontaneously. In empyema that shows a tendency to spontaneous healing, the secretion loses its suppurative character by the end of the third week, at the latest, and shows predominantly a slimy consistency, while in an empyema becoming chronic the secretion remains the same in quality and quantity or gets even worse. In the latter case a treatment must, of course, be undertaken, the aim of which should be the systematic removal of the pus from the antrum of Highmore. How can this best be accomplished? Shall we make an artificial opening or shall we irrigate through the ostium maxillare or through the ostium accessorium?

In my experience, I am sure it is worth while to irrigate through the ostium maxillare or ostium accessorium providing it can be done without resection of the middle turbinate bone. In this manner the antrum can be irrigated daily, and it must not be doubted that many acute cases, which do not heal spontaneously, recover. The number of irrigations necessary vary greatly; from a few irrigations to daily irrigations lasting several weeks. Patients who fear an operation, willingly subject themselves to a daily treatment lasting for several weeks if they but have the prospect of recovery.

If irrigations for four weeks are without results then I would advise to have a permanent opening made through the inferior meatus. This procedure will cure all acute cases of antrum trouble if you and the patient have faithfully performed these duties, and if no results are obtained, then the empyema is chronic and possibly there is bone involvement, or polypoid formations. All acute empyemas become chronic after three months' duration; however, this is only approximate as we have no reliable rule by which to tell when an acute inflammation passes into the chronic state. It is the acute forms of inflammation of the antrum that the general practitioner is generally called to see and treat, and I believe that the above mentioned methods of treatment are very simple and produce the best possible results. On the other hand the specialist treats cases, principally, that are already far beyond the limit when we may still call them acute; they produce symptoms and disorders of all descriptions and at times defy every conservative treatment. In the majority of these cases it is absolutely necessary to make a large opening through the wall in the inferior meatus. However, trial irrigations through the ostium maxillare sometimes succeed, and I would advise doing this first, for sometimes the results are so satisfactory it is surprising. Making the opening in the inferior meatus represents only a conservative method, it does not insure a complete cure. A complete cure can only be guaranteed, with a probability of bordering on certainty, by the Caldwell-Luc method or by one of its modifications.

I wish to emphasize that in most cases of chronic empyema, only a relative indication exists for the performance of a radical operation for as long as daily irrigations through any existing opening prevents any further considerable injury to the organism. Then again we have patients who are mentally depressed by the consciousness that they are suffering from chronic suppuration, and melancholia may develop. In such cases we have a psychic indication for the performance of a radical operation. Then we also have social reasons, for instance, clerks, tutors, maids or those who intend to enter into matrimony. An absolute indication for the radical operation of the antrum exists only in those cases in which either a distinct affection of the bony frame work exists, or in which definite symptoms of a tumor formation in the antrum are present, such as polyps and cysts. We see involvement of the bony framework frequently after intensive suppurative periostitis which proceeds from caries of a tooth. In these cases large sequestra may form, the removal of which requires extensive opening of the antrum of Highmore. Also in those cases of empyema of the antrum in which the presence of polypi or cysts is diagnosed, only the radical method of operation can bring relief.

I believe it is very important, especially in the chronic cases, that we do not attempt to do any intra- or extra-nasal surgery without first having a roentgenogram taken, as many times there are latent infections without physical findings whatever, within the nose. We often find malpositions of unerupted or even unexpected teeth, that are, more frequently than we would think, capable of preventing a cure of an antrum affection. I would also advise the general practitioner who treats the majority of acute antrum infections to have a roentgenogram taken whenever convenient. And in case the patient is slow in making a recovery I would say that it is absolutely necessary to have an X ray picture taken for it is only in this way that the complications which retard recovery can be found and properly treated. Many times we have ethmoid involvement which interferes with speedy antrum recoveries.

It is on account of these complications and latent infections which interfere with satisfactory progress in the treatment of antrum disease that I wish to emphasize the routine use of the X ray especially in chronic cases and whenever possible in the acute also. The antrum of Highmore when properly opened and irrigated with weak boric acid solution generally heals very quickly and if it continues to cause trouble, if suppuration does not cease, you may be sure that it is due to complications of some sort.

THE POINT OF CONTACT.*

Robert McConaughy, M. D., York, Nebraska.

Some years ago I stood in the Royal Square of Belgium's capital, gazing in admiration at an immense bronze statue representing a knight of old, astride his fiery steed, both clad in full armor of mailed steel. In his right hand the Knight held aloft the banner of the ancient Templars, whose field was half white and half black, signifying that while these Christian warriors were fair and favorable to the friends of Christ, they were dark and terrible to His enemies.

On this very spot a thousand years before stood Sir Godefroy Bouillion, the leader of the first crusade to the Holy Land to rescue the sepulcher of his Lord from the infidel Turk. He rallied around him an army of faithful followers and at once took up the long and dangerous march through storm and flood; enduring famine; cutting his way through the enemy's vast hordes in many a bloody battle, until at last he stood before the gates of the Holy City demanding admission. He was refused but he battered down the gates and continued the slaughter until his enemy was conquered and the holy tomb rescued.

Having won the victory, his followers attempted to make him king and place upon his head a crown of gold. He refused the diadem, saying, "I would not wear a crown of gold when my Lord and Master, the King of Kings, was compelled to wear a crown of thorns."

His "point of contact" with the Christ had been so direct, he would permit no selfish ambition to mar the escutcheon which he had so dearly won through love and duty.

A few days later I stood upon the battlefield of Waterloo. I looked upon a monument built entirely of earth taken from the field, shaped like one of the Egyptian pyramids, and tapered to a point two hundred feet above the level field. On the very apex of this huge structure was a gigantic British lion looking out defiantly over the scene. I could almost hear him roar his death knell to any who in the future might have the temerity to twist his tail.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

Then I stood at the old farm house where the bloody battle was lost and won. The brick wall surrounding it was so shattered by cannon and musket shot that scarcely a square inch of untouched surface remained. Here, though nearly lost, but dearly won, was decided, not only the fate of a nation, but of a continent. The Lion had a right to roar. Yet, in the city not far away—

"There was a sound of revelry by night,
And Belgium's capital had gathered there
Her beauty and her chivalry. And bright
The lamps shone o'er fair women and brave men.
A thousand hearts beat happily, and when
Music arose with its voluptuous swell,
Soft eyes looked love to eyes which spake again
And all went merry as a marriage bell.
But hush! Hark! A deep sound strikes
Like a rising knell.
Did you hear it? No; 'twas but the wind
Or the car rattling o'er the stony street.
On with the dance! Let joy be unconfined,
No sleep till morn, when youth and pleasure meet
To chase the glowing hours with flying feet."

The "Little Corporal" had outgeneraled the "Iron Duke." His officers with fair ladies were dancing away the wee small hours unconscious of danger, while his men on the field, like sheep without a shepherd, were stampeded and slaughtered. The retreat was halted; the lines reformed; but he would have failed to win the victory had not Blucher, with his cohorts, appeared upon the scene at the phsychological moment.

Napoleon's "point of contact" was direct. That of Wellington and Blucher was, each one, oblique, but they converged at the apex. The battle was won; the world saved.

But a little while ago there was another sound—not of revelry, but of grim war. And Belgium's capital had gathered, not her beauty, but her chivalry. And the cry was, "The Hun! The Hun! They come! They come!" But hush! Hark! A deep sound strikes like a rising knell. It was the boom of cannon and bursting shell. A million hearts beat loyally; swift contact was made, but the avalanche broke through, leaving death and devastation in its track. France was invaded. Fresh contact failed to turn the tide, and the gates of Paris were besieged.

Italy heard and responded to the cry for help. The British Lion roared and was soon on the field. When the Black Eagle met the King of Beasts, then came the tug of war. Backward and forward swayed vast armies while the world looked on with bated breath.

The American Eagle heard the cry for help, spread his wings, soared aloft, and with swift flight was soon on the scene of carnage. With a scream of defiance he swooped upon his prey. The struggle was brief. The Black Eagle was soon on his back with his toes turned up, his wings clipped, and his tail feathers missing. It took contact on contact to win the fray.

"If war is hell, as did Sherman say,
It grows heller and heller day by day—"

and the next war will be so much more disastrous, if we are to believe our military experts, than any that has ever been fought, that there will be no comparison.

We are still in a world of war—not of shot and shell, but of industrial unrest; burdensome taxes; unpaid debts; of international anxiety and distrust of one another as nations. Great combinations of wealth and labor control industries of all kinds. Steel trusts, oil trusts, beef trusts, labor federations, sugar trusts, grain trusts—each one the tendril of a great octopus encircling the world. Individual effort has little inspiration to engage in the ordinary pursuits of life. Small competition is compelled to submit to dictation from these great industries. Even strong governments are apparently unable to control the situation.

"There is a divinity which shapes our ends,
Rough-hew them as we will."

Just now it seems as if the punctuation in these lines should be changed to read: "There is a divinity which shapes our ends rough-hewn." But perhaps the tide will turn.

The same great author quoted above also says:

"There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune;
Omitted, all the voyages of their life
Is bound in shallows and in miseries."

Since the world began, man looked in awe and fear on the wild lightning's flash, until Benjamin Franklin flew his little kite and proved that the electric current could be made to do his bidding.

Not until Sir Isaac Newton studied the problem of the falling apple did the attraction of gravitation receive any attention.

Not until the experiments of Watt and

Fulton did the world know such a force as steam existed.

We know very little more now than did they, what these forces are, but our great inventors and discoverers have worked out the problems until we see the effects and know they are the light of the world and the force and power that drive every industry on land and sea; in the earth beneath and the air above. They keep us from flying off into space while this little world of ours mixes up with the vast universe and holds its own in the realm of the infinite.

Perhaps some day the mystery will be solved, but we are told it will only be three million years until this little speck of earth will be dissolved in rays of the sun. We are a great store house of machinery, wheels within wheels; every one a spoke in a wheel; a wheel on a shaft; directed by a man at the switch, an engineer at the throttle, and a captain of industry directing the plant.

Aside from a few scientific wizards, men who have worked their way from the bottom to the top, no man is a finished product. He is an imitator, a part of a machine. He learns to drive a nail, clinch a rivet, turn a switch, and passes the unfinished product to the next cog in the wheel of progress. Almost nothing sells itself. It is handled by big combinations and these big corporations depend on world-wide advertising.

Advertising has become a fine art, and some of our most attractive art studies are to be found in the advertising pages of the popular magazines.

Even the lawyer depends on his friends and the newspaper accounts of his cases to win him fame. His ambition is to become a great corporation attorney. He combines with his fellows to protect himself and his financial interests.

The minister is not so fortunate, yet he must use a certain amount of diplomacy to get a hearing and keep in the limelight—keep in touch with his friends in the great church governing body, for he is not averse to being called higher up into a larger church or important official position.

And what of the poor doctor? What is his "point of contact" with the world? Alas! he is forbidden to advertise. He must keep mum and view the passing show. He is not permitted to say he is as good, or even better, than the man next door. Oh, yes, he can put his name on the office door; swing it out on a little shingle; put it in the county paper. He can be a member of the county, state and American medical associations. He must "sit tight" and watch the sick and the near-sick swallow the advertising junk of the osteopath, chiropractor, Christian scientist, mental healer, Abramite, miracle healer, auto-suggestionist, or the one adopting the self-healing formula: "Every day in every way I am getting better and better."

But we are making progress. We are becoming specialists and are permitted to tell the world so, as often and in as many ways as we please. We may just have come through a medical school and a short hospital experience, with no general knowledge gained from years of practice as a foundation; but we are specialists just the same! We can take out an appendix; cut out a tonsil; enucleate an eyeball; remove a baby and repair the ruptured perineum; take an X ray; clear out an intestinal tract; put in good running order a heart or a kidney—and let some one else look after the rest of the anatomy!

Some of us are forming into groups or clinics, and allowing the public to understand it can get more scientific treatment from our several specialists than from the family physician of many years' experience. The fees are larger, of course, but they have to be passed around.

Abe Martin says: "It seems like it is impossible fer a celebrated doctor t' know th' liver an' know anything else—what's goin' on in world affairs, or what show is at th' hall tonight, or which is th' best gas, or how t' collect what's comin' t' him."

Dr. William Brady says: "The introduction of diagnosis by machine has opened an attractive field for commercial genius. Shrewd young men have launched into medical practice on the group clinic plan, with an imposing outfit of technical machinery and a routine which costs the customer—we can scarcely say patient any more—a pretty penny. But the customer gets a complete protocol of his case, with all the findings. Sometimes he has his X ray picture taken in all sorts of outre poses, and finds his gears or parts terribly out of place. Or perhaps he discovers that his blood sugar is a decimal point off par or that his Wassermann examination carries a cross. Then his troubles begin. Somehow the ponderous 'reports' don't mean anything to the physician."

What is to become of the family physician? Even the hospital is closing its doors against him. If he takes a patient there he must turn him over to the staff and residents for care and treatment. Of course, the large hospital is better equipped for taking care of a serious case.

Dr. E. M. Bluestone, of New York, in an article in the Journal American Medical Association, April 21st, says: "The growth of the closed general hospital has brought a regrettable estrangement between the private practitioner and the hospital. The family physician constitutes the backbone of medical practice. The earlier stages of disease are seen by the practitioner, who refers the patient to the hospital if the condition requires surgical intervention or is progressive and not subject to control with the limited facilities of the home.

"But when the practitioner refers his patient to the hospital, how much effort is made by those who are to help in the solution of the problem to learn from him what came before in the clinical course? To ignore the physician is to ignore an opportunity to get at the beginnings of disease. The physician is the neglected factor in the proper handling of the case by hospital authorities. The code of medical ethics seems to cover only the relations of individual physicians to one another and to the patient. It should be interpreted broadly to include the relations between the hospital and the practitioner."

In the same article he quotes Sir James Mackensie as follows: "Medicine will make but halting progress while whole fields essential to the progress of medicine will remain unexplored, until the general practitioner takes his place as an investigator. He has opportunities which no other worker possesses."

And why not? He has a lifetime of experience as a foundation.

The query, "What is to become of the family physician?" is one which seems to concern the people, if not the profession.

The old-time doctor of the William McClure type—Do you remember him? I have one very tenderly and lovingly in mind. He was six feet, four inches tall and weighed two hundred and forty pounds. He settled in a rather sparsely settled part of western Pennsylvania. His territory was large. He rode or drove day and night, over mountain and meadow, summer and winter. He had a jovial disposition, and when he entered the sick room he took with him good cheer. He never said, "My dear man, you are near death's door and it will be hard work to pull you through." On the contrary, he left him with hope and courage for the battle with disease—and he didn't use the Coue method, either. He used calomel where it was needed, not in one-tenth grain granules, but ten-grain powders, again and once again—and the patient recovered. That man was my father, and I have occasion to know whereof I speak. I was with him the last ten years of his active practice and was permitted to enjoy fifteen years of counsel after his retirement. He had thirty-six cases of typhoid at one time in a little village near our home town. The entire population was down. The sanitary conditions were bad. There was no well equipped hospital to which to take them; no well trained nurses to care for them. They were lying on beds, cots, and on the floor, waiting on one another—and they all got well—full doses of calomel and a thorough cleansing of the intestinal tract. He knew nothing of antiseptic treatment, but he was using it, just the same—nothing much after that first care unless complications arose.

My first information in regard to the germ theory of disease was received while a student of the Jefferson Medical College. Professor Samuel D. Gross, a commanding, dignified presence, six feet or more in height, dressed as he always was in full frock coat, came into the amphitheater one day for his morning lecture, accompanied by a dapper little man who reached about to his shoulder. As they appeared before the class, the professor said, with rather a sarcastic smile, "Gentlemen, this is Dr. W. W. Keen who has a School of Anatomy. He has a few little bugs he wants to show you."

Dr. Gross, of whom the renowned Virchow said, "If he were not the greatest surgeon of the world, he would be its greatest pathologist," took very little, if any interest in the new theory, but continued his skilful work in the way he had always done—absolute cleanliness, though not under perfect aseptic conditions.

I witnessed the first operation under what was then considered as nearly aseptic surroundings as could be had, a few years later, when two Pittsburgh surgeons came to my home town to remove an ovarian tumor, which they successfully did under a continuous carbolized spray.

My father did much of his surgical work, including major amputations, before the days of anesthesia. Together we did all our work before the days of sterilization. Reviewing the work we did then, I cannot but see that, barring the longer time taken in the healing process, results compared rather favorably with those of today. True, we did no abdominal work.

I still insist that the general practitioner who keeps abreast of the times, is at least as capable of rendering acceptable service as many of the specialists who jump from college and hospital into private or group work.

The real "point of contact," however, is this: As a profession we are up against "a condition, and not a theory"—the physician a more serious one than the surgeon. The surgeon's outlook is perhaps more a theory than a condition, for his work can not be so successfully combated by the charlatan. Even the physician has to turn over much of his work to him without the hope of fee or reward.

The physician is face to face with hordes of cults, 'isms, 'pathies, the patent, and even the proprietary avalanche, adverse legislation, and what not. Must we take our own medicine, or will we be compelled in self defense to take the advertising field as have these more or less successful rivals, other professions, and the business world at large?

Much blame may attach to ourselves, for we are continually making so-called new discoveries and abandoning them in a little while. That only denotes progress, but many of the laity are too blind to see it, or too indifferent to appreciate our efforts in their behalf.

We have annihilated typhoid, malarial and yellow fevers; minimized the terrors of diphtheria and smallpox; made encouraging inroads on tuberculosis and cancer. By hygiene, protective and curative medication, vaccines and serums, school inspection and early discovery and correction of mental and physical defects, sanitation and quarantine, we are rapidly putting ourselves out of profitable business. Instead of thankful appreciation of our unselfish efforts in behalf of suffering humanity, we receive much adverse criticism and obstructive hindrance in our efforts to produce future generations of better men and women.

Dr. Harvey W. Wiley says: "We have in this country individuals who may be called professional invalids. They are people who find their only happiness in being miserable. In their solitude they ponder upon their supposed infirmities. In company they talk about them. In sleep they dream of them. They convince themselves that they are victims of at least one disease, or frequently have a fine assortment of fashionable afflictions."

Dr. Coue in his book, "Self-Mastery through Conscious Auto-Suggestion," says: "I say that if certain people are ill mentally and physically, it is that they imagine themselves to be ill mentally and physically. If certain others are paralytic without having lesions to account for it, it is that they imagine themselves to be paralyzed, and it is among such persons that the most extraordinary cures are produced."

If this is sound doctrine, we are either up against a hopeless condition, or much work remains to be done to eradicate these hallucinations.

History tells us that many cults and schools have appeared upon the stage for a little while and then have utterly disappeared; and we have reason to believe that many of the so-called "Schools of Healing" will follow in their wake. We have every reason to be proud of the present day attainment of medical and surgical science. Mortality records have been cut in two. The span of life has been greatly lengthened. Men are no longer old and ready to die at "three score years and ten," as David said. Age is no longer recorded by years, but by heart throbs; by arterial tension; by brain cell activity; by nerve and muscle energy; by secretive activity of glands and vital organs.

Sir William Osler set the age of supreme usefulness at sixty years, but attained his greatest reputation and highest honors after that age. Gladstone was Premier of England at eighty; Clemenceau, Premier of France at eighty. Marshal Foch's greatest military honors were won at seventy. Major General Gorgas was in active service almost to the time of his death. H. C. Frick, the steel magnate, a boyhood friend of mine, worked until he died at the age of seventy-one, worth two hundred millions. Edison works as hard as ever at seventy-five.

Some would-be poet stated only a half truth when he wrote these lines:

"King Solomon and King David led merry, merry lives;
They had many, many concubines, and many, many wives;
But when old age came on apace, with its many, many qualms,
King Solomon wrote the Proverbs and King David wrote the Psalms."

Whatever be our age, are we willing to take our places as investigators, or are we ready to rest on the laurels already won by ourselves, or the noble, self-sacrificing profession of which we are members?

THINGS NOT DONE BEFORE

"The things that haven't been done before,
Those are the things to try.
Columbus dreamed of an unknown shore
On the rim of the far-flung sky,
And his heart was bold and his faith was strong
As he ventured with dangers new,
And he paid no heed to the jeering throng
Nor the fears of a doubting crew.

The many who follow the beaten track
With guideposts along the way;
They live, and have lived for ages back
With a chart for every day.
Some one has told them it's safe to go
On the road he has traveled o'er,
And all that they ever strive to know
Are the things that were known before.

The few strike out without map or chart
Where never a man has been;
From the beaten path they draw apart
To see what no man hath seen.
Their deeds they hunger alone to do,
Though battered and bruised and sore;
They blaze the trail for the many who
Do nothing not done before.

The things that haven't been done before
Are the tasks worth while today;
Are you one of the flock that follows, or
Are you one that shall lead the way?
Are you one of the timid souls that quail
At the jeers of a doubting crew,
Or dare you, whether you win or fail,
Strike out for the goal that's new?"

PRIMARY MUMPS INFECTION OF THE LACRIMAL GLANDS.*

Arthur E. Wade, B. Sc., M.D., Lexington, Nebr.

Mumps is a contagious disease of undoubted specific infection as is shown by its epidemic character holding true to type and habits. As yet the organism has not been certainly isolated, but its habits, if not its character are well recorded.

It is not within the realm of this paper to enter into a lengthy review of the disease but to call attention to its predilection for glandular tissue. Opportunities for pathological examination are rare, but such as circumstances have given us reveal an edema and congestion of the interstitial tissue and of the periglandular tissue, attended by a round cell infiltration. The parenchyma during the inflammation is uninvolved and is destroyed only when later processes of atrophy take place, due to disturbed nutrition from the presence of newly formed white fibrous tissue.(1)

So true is it that the mumps infection involves only glandular tissue and so constant is it that the parotid is the almost universal gland primarily involved, that the words, 'epidemic parotitis' have almost superceded the word 'mumps' in medical nomenclature. As described today in American text books, mumps is a disease of the parotid occasionally accompanied by similar infection of one or more of the other salivary glands and an orchitis, oophoritis or mastitis as complications. Cases are reported in which the primary infection attacks the submaxillary and sublingual glands. A case recently seen presented typical mumps of the sublingual glands followed neither by parotitis nor metastasis elsewhere.(2) Besides the common secondary infection of the ovaries, breasts and testicles, Griffith reports secondary infection of the pancreas and lymph glands(3) and Osler (4) and Leriche(5) report secondary infection of the lacrimal glands.

Thus the organism is seen selecting various glands of the human economy for a habitat.

There is no reason for the abounding prominence of the parotid in mumps other than the vulnerability it possesses in the location of Stenson's duct, located as it is an open prey to invading gland selecting organisms. Hence other glands may with well directed attacks from the infecting organism fall victim to mumps and become seats of primary infection. Exemplifying an infection of this type is the case I report:

On April 14, 1920 Mrs. C. M. age 34, presented herself at my office with negative family and personal history, complaining of general malaise, chilliness, headache, general neuralgic pains and especially a painful right eye, with as she called it 'a lump under the outer upper lid'. The temperature was

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

102.4, pulse 110. All symptoms pointed to the invasion of some acute infection unexplained by history of exposure to contagion. Examination of eye revealed a very dry and injected conjunctiva, normal pupil, eye grounds and vision. The lump under the lid proved to be an enlarged palpable lacrimal gland about ¾ inch long and shape and size of an almond of that length. The gland was very tender upon pressure. There had been no trauma or other known injury to the gland. No diagnosis was given and patient was put upon symptomatic treatment. April 15, patient was visited at her home. The same symptoms continued. Temperature 102, pulse 108. The pain in the lacrimal gland was more intense and intraorbital tension marked. A review of history failed to throw new light upon the condition. A reserved diagnosis of neoplasm was considered.

April 16, patient felt better. Temperature 100, pulse 90. The right lacrimal gland was still large but the pain was receding. The left lacrimal gland was found to be enlarging and painful. With the involvement of the left gland the tentative diagnosis of neoplasm was withdrawn.

April 17, the left gland as the right had been three days prior. Temperature 102.6, pulse 124. There was a return of malaise.

April 18, all symptoms were subsiding except size of both glands. April 19, same. No fever. Patient felt much better. April 23, patient returned to my office. All pain was gone from the lacrimal glands, yet both were as large as at any time. All periglandular swelling had subsided. There was a decided bilateral parotitis, typical of mumps. Temperature 102, pulse 120. From this time on, a typical mumps prevailed during which the lacrimals became normal in size and a mild mastitis followed in due time. A very searching review of history as to exposure revealed that the patient had 18 days before onset of the lacrimal gland infection, held a baby suffering with mumps, and then remembered that the baby had repeatedly coughed into her face.

I have searched American literature widely for a record of a primary mumps infection of the lacrimal glands but with no success. I have, however, in foreign fields found reported four similar cases.

E. Fuchs(6) in 1890 reported a male, 61 years old. A swelling appeared in upper eye lids with palpable tender lacrimal glands; sight undisturbed. This was followed by parotitis. Diagnosis rendered mumps. In the same paper is reported a case of Gordon Norries. A girl aged 11; both lacrimal glands swollen and inflamed. A swelling of the parotids followed in a few days and case followed course of typical mumps. H. Alder (7) in 1894 reported a male 40 years old. Both lacrimal glands swollen; skin not tense; eyes closed by swelling; slight exophthalmos; ecchymosis of left lid. This was followed by swelling of the sublingual glands so that the tongue was forced against the gums and respiration was difficult.

There was also a swelling of the submaxillary glands; and finally a slight bilateral parotitis. Conjunctivitis existed. Case was easily diagnosed as mumps.

Sendral(8) in 1901 reported a girl aged 11 who began suddenly to complain of general lassitude and muscular pain; eyelids swelled and closed; a thick serous infiltration appeared in external angles. The diagnosis was acute primary dacro-adenitis, cause undetermined. Two days later patient complained of difficulty in moving the jaw. A large parotid appeared up both sides. It was quite evidently a case of mumps. Two days later pain appeared in regions of breasts and ovaries and primary swelling of the lacrimals was receding. One week later the child was perfectly well. There was at no time any trouble with vision.

These four cases are all I find reported.

CONCLUSION

The mumps organism must find a glandular tissue for its attack upon the economy. Any gland with a duct communicating with the exterior may become the primary seat of infection.

The relative frequency of certain glands becoming first infected must depend upon the varying exposure of their respective ducts.

The name 'epidemic parotitis' is not specific of mumps. Better would it be to reserve 'epidemic parotitis' as a symptom designation for that nearly universal revelation of our diagnosis.

BIBLIOGRAPHY

1. Griffith—The Dis. of Inf. and Children, 1919.
2. J. E. Olsson—Clinical Case, 1922.
3. Griffith—The Dis. of Inf. and Children, 1919.
4. Osler—Prin. and Pract. of Med. 8th Ed.
5. Leriche.
6. E. Fuchs—Beitr. Z. Augenh. Leipzig 208-215, 1890.
7. H. Alder—Mitth. d. Wien. Med. Doct. Coll.—20:113, 1894.
8. Lendral—Rec. d. opht.—23:197, 1901.

"Advertising is news. And when advertising tells you of ways by which many of your needs can be met, it is welcome news. Do you make use of it as much as you might?"

INJURIOUS EFFECTS OF IMPROPER LIGHT UPON THE EYES.*

L. B. Bushman, M. D., Omaha, Nebr.

Good eyesight is as important as physiological health, and though most people pay considerable attention to the latter, it is surprising how few give much thought to the former. They feel that as long as light is bright or strong enough, vision is sufficiently taken care of. The ever increasing number of individuals now consulting oculists, complaining of symptoms incident to tired, aching eyes, has caused much comment by parents, teachers, employers and physicians. The fact that these complaints come mostly from school children, students and clerks, whose occupations demand close application, would at first thought indicate that a properly corrected error of refraction would afford immediate relief, but we find that such examinations and corrections do not suffice and upon further inquiry we often realize that the cause of discomfort lies in this, that they are continuously subjected to improper light, both natural and artificial. We know that a large percentage of people possess subnormal vision, but in spite of this, manage to get along nicely if working under proper illumination, or if not obliged to exert exceptional stress upon their accommodation. In other instances, however, we are surprised that after completing a thorough refractive test under a cycloplegic, a very slight and unimportant error is revealed, entirely insufficient to explain the severity of the eye fatigue complained of. By laws and literature, the average layman has become fairly well versed in matters pertaining to hygiene, proper food and living conditions, and as a rule lends hearty cooperation to those organizations interested in school, factory and public inspections, but at the same time he expects and relies upon those appointed agencies to fully carry out their duties. This means that we must carefully protect and conserve the vision of those in our charge. During the formative period of life every precaution should be used which conduces to good illumination, natural and artificial.

A very common error exists with many, who suppose that the stronger the light, the better for the eye, and, conversely, that as long as eyes seem strong and apparently able to operate regardless of the source of illumination. They do not realize that a severe muscle strain or retinal exhaustion with other consequent pain symptoms, is bound to follow over-taxation of the eyes. In case of light insufficiency the eye is at first able to function by straining, but later its efficiency lowers. This follows because in an insufficiently lighted room, the pupil tends to dilate and when the individual attempts near work the natural act of accommodation causes the pupil to contract, thus demanding a double action of dilation and contraction at the same time. When light is dim or bad the focusing muscle hunts for some focus to make objects look clear, but eventually the muscle gets tired trying to do so, and hence follows the pain, headache and other discomforts complained of. With excessive light or illumination, we have the same story, though brought about in a different manner. Retinal exhaustion preceded by conjunctival irritation and blurring, occurs when we gaze too long at objects which reflect too much or where accommodation attempting to shut off excessive light must decide between a poor visual field or the reduction of injurious rays.

The citation of one case in our experience may illustrate the substance of this paper. Case:

S. S.—age 23, law student, also performing work as bookkeeper at night. Complained of eye strain and inability to satisfactorily keep up with his studies. Inspection of eye lids showed a severe conjunctivitis with inflamed and swollen conjunctiva. The appearance of the lids was so severe that he had been treated for trachoma. Eye examination: Vision, muscles, refraction, media and retina normal.

Under complete cycloplegic retinoscopy an astigmatism was revealed—R. Eye, plus 50, axis 30; L. Eye plus 37, axis 150. This correction was prescribed but no improvement followed. Our patient stated he was particularly bothered while at his night work, adding that the illumination was a bright electric light, high up on the ceiling. We advised a change in lights. This was done and all symptoms disappeared.

The ideal condition for proper vision is a uniform illumination, natural or artificial, which allows accommodation and fixation to take place most accurately and with comfort. Changes of bright to dim light, especially when suddenly made, cause discomfort and visual inefficiency. Particular attention should be observed in the painting and colors of rooms. Wall brightness which exceeds that of the papers or books on the desks is most annoying and should never be more than twenty per cent of the latter. Diffused or indirect light is best as all parts of the room are uniformily illuminated, removing reflection and shadows, and producing the nearest approach to natural day light and giving best results for comfort and conservation of vision.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

Most fortunate for all of us is the fact that exposures of extreme intense wave lengths, if insufficient to produce heat effects, will be impossible to injure the retina, lens or refractive media.

Over stimulation cannot injure the retina, because after, and during the stage of retinal fatigue recuperation begins. No sources of practical illuminants, such as are generally used today, are to be considered dangerous so far as organic or permanent injury is concerned, and ordinary care in selecting illumination which provides comfortable vision is sufficient guarantee against all ocular injury from radiation.

DISCUSSION.

F. A. Wells, M. D., Axtell: In discussing Dr. Bushman's paper, will say that the amount of light entering the eye and the direction from which it comes are of much importance. Nearly all direct light rays come from above. In playing tennis or other outdoor sports we are often temporarily blinded by looking for the ball which is nearly directly in line with the sun. In using artificial light we often have to nearly close our eyes to exclude the excess of light.

The method I have devised to exclude these superfluous light rays is to have our spectacles tinted heavily in the upper part and diminishing in intensity, in the lower part, to only a slight tinting. I inquired of an optical company if they can do this graduated tinting and they have answered affirmatively. I will have my next spectacles tinted in this manner.

VACUUM SINUS.

Geo. A. Griot, M. D., Chadron, Nebr.

Unending headache, ranging from a low grade to a severe type, is established by closure of the frontal or sphenoidal sinus, without nasal signs or symptoms such as obstruction or secretion.

Use of the eyes increases the pain. The air in the sinus is absorbed sufficiently to cause negative pressure, which makes the walls sensitive. If the frontal sinus only is involved, the signs and symptoms are usually confined to ocular manfestations, while those of the sphenoid sinus seem to have a less definite clinical picture. At times the ocular symptoms predominate, and in other instances the headache may be the sole complaint. In some cases there are both ocular symptoms and headache.

The ordinary headache remedies give little or no relief, even if the maximum amount is given, and never bring about a cure in this class of cases.

REPORT OF CASES.

Case 1. Mrs. R. M. Age 35. Referred by Dr. Pierce, who stated that patient has a headache which does not respond to treatment. She complained of severe daily headache for past two weeks, aggravated by use of eyes. Reading caused blurring and burning sensation in both eyes.

Eye report by Dr. Arthur J. Griot is as follows: Eye grounds negative. No pathological findings.

$$\text{Glasses now used}\left\{\begin{array}{l}\text{OD}+25=+50\text{cx}60^\circ\\ \text{OS}+25=+50\text{cx}60^\circ\end{array}\right.$$

$$\text{Glasses prescribed}\left\{\begin{array}{l}\text{OD}+25=-25\text{cx}90^\circ\\ \text{OS}+25=-25\text{cx}90^\circ\end{array}\right.$$

Blurring and burning sensation was completely relieved by correction, but the supra and infra-orbital and temporal headache persisted.

Nasal examination. Mucosa and turbinates normal in appearance. Septum deviated slightly to right. Post-rhinoscopic examination with mirror revealed space between right sphenoid and turbinates narrower than on left side.

Naso-pharyngoscope showed following findings. Mucosa normal in appearance. No visible opening of right sphenoid. A small area of thickened mucous membrane located in the region of the right sphenoidal opening, had the appearance of a small raised island about one-fourth inch wide and three-eighths inch long with a slit like depression in the center.

The spheno-palatine ganglion was anesthetized with ten per cent cocain which had practically no influence on the headache.

An application of cocain and adrenalin was made over the small area of thickened mucous membrane located over the right sphenoidal opening. When same was shrunk headache subsided immediately. No pus or mucous was found. A probe could now be easily passed into the right sphenoidal opening. An intra sphenoidal application of adrenalin chloride and a two per cent solution of silver nitrate applied over face of sphenoid concluded the treatment. Patient was free from headache after first treatment. Seven treatments were given over a period of nineteen days the last two one week apart. No recurrence of headache since March 1922.

Case 2. Mr. H. J. Age 27. Complained of pain in right eye for past six weeks, aggravated by using eyes. He stated that he needed eyes tested for change of lenses. Present lenses had been worn for four months. Vision was tested and found that no change of lenses was necessary. Other eye findings normal.

Gentle pressure on the inner angle of the right orbit revealed a small exceedingly sensitive area.

Nasal examination showed no pus, mucus, or inflammation of mucous membrane. Nose was of the narrow type. The right middle turbinate hugged the wall snugly, completely closing the middle meatus. This closed the outlet of the frontal sinus as a cork stops the mouth of a bottle. A five per cent cocain and adrenalin solution was applied to middle meatus especially high up in the vault. After a few minutes the middle meatus was open and the pain in the right eye subsided at once. Patient was observed for one hour and no pus or mucous found then nor at any subsequent visit.

Treatment. Mucous membrane of right middle meatus was shrunk with cocain and adrenalin then a two per cent silver nitrate solution applied to entire surface of middle meatus. Six treatments brought about a complete cure with no recurrence since May, 1922.

CONCLUSIONS.

1. Patients complaining of persistent headaches should have a careful nasal examination, especial attention directed to sinus outlets.
2. Absence of pus, mucus or inflammation on nasal inspection does not always mean that headache and eye disorder is not of nasal origin.
3. Correction of lenses will have no influence on headache due to a vacuum sinus.
4. Headache due to vacuum sinus does not respond to the ordinary headache remedies.
5. Prompt relief after proper treatment in nearly all cases.

REFERENCES.

1. Greenfield Sluder. Headache and eye disorders of nasal origin.
2. Ewing, H. E. A point in the diagnosis of the frontal headache. St. Louis Courier Med., 1899, page 370.
3. Lynch, R. C. Vacuum diseases of the maxillary sinus. Annals Otol. Rhin and Laryngol. 1914.
4. Onodi, Landislaus. Ueber die Beziehungen der Keilbeinhoehle zu den Nervenstaemma des Oculomotoris. Trochlearis Trigeminus und Abducens Archiv, f. Laryng. U Rhin. 1912 II Hft. July, 1912.

RAT-BITE FEVER. REPORT OF CASE.

E. S. Wegner, M. D., York, Nebr.

The following case is reported because it was in itself typical of the disease, and more especially because, having been seen by a number of physicians during several weeks of time, remained unrecognized.

French, in his "Index of Differential Diagnosis," says rat-bite fever is "habitually unrecognized."

In reviewing available literature on the subject, I find that no case has been reported in the Journal A. M. A. for a number of years past, and that most references to the disease or to case reports, lead one to foreign medical journals.

Case History: D. D. male. Age 3 years. First seen March 21, 1923.

Complaint: (1.) Infection, on ring finger of right hand. (2.) Fever.

History of Present Illness: Early in January (1923) the child was bitten on the finger by a rat. The lesion healed within a few days, but the area immediately surrounding it remained red. In about three weeks the redness spread and the finger became swollen. At this time the child was restless, irritable and had fever for two or three days. Then the symptoms subsided to return in a week or ten days. This recurred again and again, the interval between exacerbations becoming shorter and the symptoms more severe.

About the middle of March the child was taken to the family physician who lanced the finger. (No pus was found, the mother said). For a few days the child seemed to be improving, then his finger and hand became more swollen and angry looking and his fever was very high for two days. He ached all over, objected to being handled and would not eat.

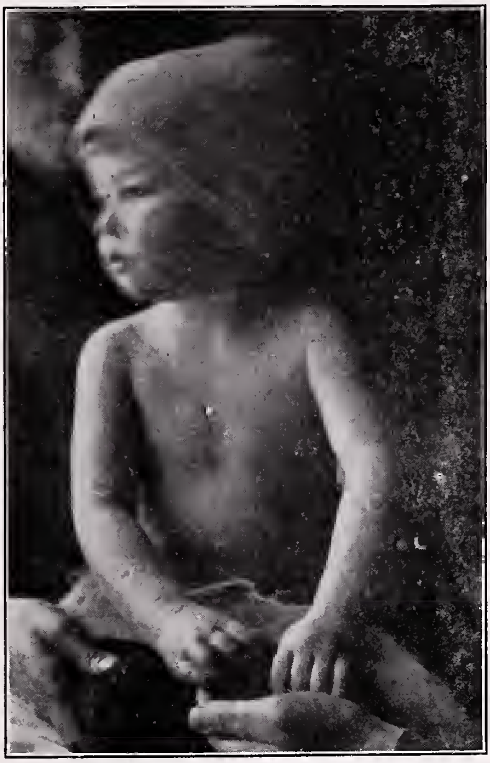
Physical Examination: Child looked sick. Whimpered almost constantly. When moved he cried out. Throat injected; tonsils not large, but very red, tongue heavily coated; breath foul.

The chest and abdomen were negative.

Reflexes: Knee jerks exaggerated.

Skin: Pale, dry and hot; no rash except on hand (right) and arm.

Extremities: Normal except right hand and arm. Here there was swelling of the hand, most marked on back and including ring finger, also wrist. There was an erythema of the skin over this area and red lines running up forearm half way to elbow. A small scab marked the place of incision noted above. (A remarkable thing noted at the time was the fact that in spite of all the swelling and redness this finger and hand were not sensitive to pressure, there was apparently no pain nor tenderness so far as the finger and hand were concerned. This finding was constant throughout the course of the disease. This fact is not in agreement with anything I have found in the literature.)



Retouched photograph showing swollen finger, hand and arm; and the two types of skin lesions with their distribution.

The whole arm seemed sore, and the boy objected to having it moved.

Glands: Epitrochlear not palpable.

Axillary on right side exquisitely tender and one definitely palpable about as large as a hazel nut.

Temperature: 101.5 rectal.

Treatment: The correct diagnosis was not made at this time. The case was treated as a pyogenic infection (large, hot, wet boric packs and a laxative). On the following day there was marked improvement so the treatment was continued. Two days later the fever, redness and swelling again increased. For this we censured the mother because she admitted having been careless about the boric packs.

Later a patchy macular eruption, bluish or purplish red in color appeared on the dorsum of the right forearm spreading upward toward the elbow. Also a round indurated lesion about the size of a quarter dollar on the anterior side of the right upper arm purplish in color, and one with the same characteristics on the left forearm. These lesions were not tender to pressure.

Still later the macular eruption appeared in the right axilla and spread to the right side of the chest, upper abdomen, back and up to the neck. Four more of the round indurated lesions also appeared; one on the left forearm and two on the right leg. The entire right arm was swollen, and the gland in the right axilla increased in size until it was as large as a black walnut. The child suffered pains in all joints and a general muscle soreness. The temperature was very irregular ranging from 97 on some days to 104 on others. When it was low the child seemed fairly comfortable and the rash faded, but when it rose again the rash became prominent and the child whined most of the time.

The rash suggested rat-bite fever, and on looking up the literature on that subject I found that the case was typical with exceptions as noted above.

.08 gms. of neoarsphenamine was injected into the right pectoral muscles on failure to get into the jugular vein.

At the time of the injection the temperature was 99 rectal. Within three hours it rose to 104; dropping in another seven hours to 97, and although taken twice daily for the following ten days, did not rise above normal again. The lesions all disappeared, the patient gained weight and has been apparently perfectly well for two months.

Rat-bite fever is not a common disease, there having been only 81 cases reported in the United States up to 1916 and yet it would seem that when the history of a rat bite is given the disease should be thought of at least.

BIBLIOGRAPHY

1. Max Emmert; Rat-Bite Fever: The Nebraska State Medical Journal, Vol. VII, No. 9, p. 316, Sept. 1922.
2. A. Rayband: Futakis' Spirochetosis; Sodoku or Sokosho? Marseille—med., 59:369, Apr. 15, 1922.

3. F. D. Arbela: Clinical Contribution on Sodoku. Riv. Crit. di Clin. Med., 23:25, 37, Florence, Jan. 25, Feb. 5, 1922.
4. Norman Briggs: Treatment of Rat-Bite Fever with Novarsenobillon: Brit. M. J. p. 185. London, Feb. 4, 1922.
5. J. Lookeren Campagne: Rat-Bite Fever. Nederl. Maandschr. V. Geneesk, Leiden, 3:73. Nov. 2, 1922.
6. Alberto Ruggiero: A case of Sodoku. Policlinico (Pract. Seck), Rome 29:781, June 12, 1922.
7. Luigi Frassi: Rat-Bite Fever or Sodoku: Margagni, 64:325, Milan, Nov. 30, 1921.
8. Vittore Zamorani: A case of Rat-Bite Fever (Sodoku). Riv. di Clin. pediat, 19:352, Florence, June, 1921.
9. Adachi, K.: Flagellum of the Microorganism of Rat-Bite Fever. Journal of Experimental Medicine, Vol. XXXIII, No. 5, p. 647, May 1921.
10. Comby, J.: Review of Rat-Bite Fever (Sodoku) in Children. Archives des Medicine des Enfants. Paris, Vol. XXIII, p. 428, July 1920.
11. Arkin, A.: Rat-Bite Fever. Report of a Case. Archives of Internal Medicine, Vol. XXV, No. 1, p. 94, Jan. 1920.
12. Burton-Fanning, F. W.: Five Cases of Rat-Bite Fever. The British Medical Journal. Vol. 1, 886, 1921.
13. Litterer, W.: A New Species of Streptothrix Isolated from a case of Rat-Bite Fever. Joural of the Tennessee State Medical Association. Vol. X: 310, 1917.
14. Tileston, W.: The Etiology and Treatment of Rat-Bite Fever. Journal A. M. A.: Vol. LXVI, 995, 1916.
15. Proescher, F.: Rat-Bite Disease with report of a New Case. International Clinics. Vol. IV, 77, 1911.

REPORT OF CASE OF ACUTE LYMPHATIC LEUKAEMIA WITH SECONDARY INFECTION OF TONGUE—DEATH.

Max Emmert, M. D., Omaha, Nebr.

Mr. E. F. M., aged 48 years, single, farmer, was referred from Iowa on April 11, 1923, because of a necrosis of the tongue.

The patient gave the following history: Excepting for scarlet fever at the age of 4 years, he had suffered from no illness. For many years he had been actively engaged in farming and had enjoyed good health. Prior to the present illness his health had been good.

Two weeks prior to admission to the hospital he had noticed "a white blister the size of a penny on the tip of the tongue which looked like a patch of cement." This patch was hard and painful and there was considerable swelling extending beyond its margin. There were no chills or fever. Four days later he called his local physician who treated the tongue locally until April 11, when he was referred.

Examination revealed a rather slightly built man, markedly anaemic. His voice was thick and weak.

Glands—No general glandular enlargement. Left axillary palpable but small, submental about the size of a bean.

Thorax—Lungs clear throughout. Heart regular —no bruits—sounds soft. Systolic blood pressure 155 mm. Diastolic 85 mm.

Abdomen—Distended with gas, no enlargement of liver. Spleen not palpable.

Reflexes normal.

Head—Noticeable swelling of the lower lip and sub-mental tissue.

Mouth—Marked pyorrhea alveolaris. The lower teeth were loose because of a marked necrosis of the gums which exposed the alveolar processes and the periosteum of the mandible extending on both sides to the first molars. This area was covered with a foul smelling grayish necrotic tissue. The same condition was present behind the incisors along the gum margin.

The entire tip of the tongue was gone so that the tongue could not be extended beyond the margin of the teeth. The denuded surface was covered with a grayish necrotic fibrous material approximately one-eighth inch thick. The tongue surrounding this area for a distance of one-half inch was edematous and slightly reddened.

Blood examination—R. B. C. 2800000—W. B. C.—69000—Haemoglobin—50%. Differential — Small monos — 75% — Large Monos—10%—Polys—15%. Cultures from blood negative, from tongue showed streptococci and spirillae; Wassermann reaction negative.

Urine—Trace of albumin and a few granular casts.

Comparative Blood Pictures

April	11	13	19
R. B. C.	2950000	1610000	1450000
W. B. C.	69200	76000	65000
Haem.	50%	35%	30%
Polys.	16	8	12
Small Monos.	75	78	80
Large Monos.	4	14	8
Eosinos.	5		

The patient died April 20, 1923—24 days after first symptom.

This case is of interest because of the rapid termination after the onset of the secondary infection which directed attention to the underlying disease. Attached hereto is the anatomical diagnosis and microscopical findings on body of the patient autopsied April 21, 1923 at St. Joseph's Hospital by Dr. B. C. Russum.

"The gross and microscopical findings in this case illustrate well the gangrenous process in the mouth or throat and the rather limited extent of lymphocytic infiltration of the viscera, which one sees in acute lymphatic leukemia.

Anatomic Diagnosis: Acute lymphatic leukemia manifested by moderate hyperplasia of the axillary, retroperitoneal and cervical lymph nodes, spleen and bone marrow with lymphoid nodules of the lining of the large bowel, and a general decrease in red blood cells; gangrenous gingivitis with necrosis of the mandible and alveolar process of each maxilla: gangrene of the tip of the tongue; acute bronchopneumonia lower lobe of each lung with lymphoid nodules of the lower lobe of the left lung; obliterative pleuritis, right; fibrous pleuropericarditis, left; fibrous adhesions binding liver to transverse colon; coal dust pigmentation of the lungs; general marked anemia of all the viscera; anemia of kidneys and heart; edema of the soft structures of the anterior abdominal wall, calcified nodule in right lobe of thyroid gland; slight hydrocele right; superficial scar of the left thigh; carious and long since missing teeth; pyorrhoea alveolaris.

Microscopical Pathology; Paraffin sections stained with H. and E.

Retroperitoneal lymph node: Only scattered remains of lymph nodules remain to remind one of the original node architecture, being almost replaced by a diffuse growth of mononuclear cells apparently small lymphocytes.

Lymphocytoma, retroperitoneal.

Nodule in colon: Nodule of lymphoid tissue in mucosa of colon.

Lung: Coal dust pigmentation. Many scattered acini filled with pink, homogeneous material. Some bronchi filled with leucocytes and blood and similar collections in walls and within alveoli. Another section of lung reveals even more marked bronchopneumonia.

Acute bronchopneumonia and anthracosis.

Myocardium: Diffuse increase of fibrous tissue. Many areas where muscle fibers replaced by scar and many mononuclears present. In some of the blood vessels are many lymphocytes and a few polys. Bordering these scarred regions some muscle fibers fail to stain clearly and their nuclei are quite faint.

Chronic interstitial myocarditis.

Aorta: The intima is thrown into low elevations by loose meshed thickenings in its deeper layers. There are scattered holes in this region, apparently the sites of fat, and many mononuclear cells.

Senile sclerosis of aorta.

Other lymph nodes: Diffuse hyperplasia of lymphoid cells with loss of all architectural markings.

Sternum: Cancellous bone. Marrow spaces filled with cells predominantly small monos. Lymphoid hyperplasia of bone marrow.

Thyroid nodule: Large cavity filled with homogeneous pink colloid. General edema of stroma and hemorrhage into some alveoli. A region 2 L. P. F. in diameter composed of indefinitely outlined small cells with deeply staining nuclei, in some places arranged about lumina, elsewhere lying diffusely.

Adenomatous hyperplasia of thyroid.

Submaxillary salivary gland: Rather extensive round cell infiltration of stroma.

Adenitis, chronic interstitial, submaxillary.

Stomach: Islands of granulation tissue in muscularis. Loss of superficial epithelium.

Gastritis, chronic interstitial.

Liver: Each portal canal is enlarged by a collection of endothelial leucocytes and small monos, with a rare poly. Many monos in liver sinuses. Very little fat in liver cells.

Chronic interstitial hepatitis, slight and lymphocytic infiltration.

Spleen: Stroma unaltered. Malpighian corpuscles very inconspicuous, while there is a diffuse hyperplasia of the small lymphocytes and endothelial cells. Considerable hemosiderin scattered throughout section.

Hyperplasia of spleen.

Pancreas: Essentially unchanged.

Adrenal: Essentially unchanged.

Kidneys: Rare swollen glomerulus. Epithelia of secreting tubules in many places very granular, some without nuclei and some cell bodies broken down and desquamated into lumen. No changes of blood vessels or stroma.

Parenchymatous degeneration of kidneys.

Prostate: Numerous corpora amylaceae. Dilated acini and round cell infiltration of stroma round about. Papillary ingrowths from wall of acini.

Prostatitis, chronic cystic.

Testes: Functioning. Many interstitial cells. Functionating testicle."

HOPE FOR THE HANDICAPPED

"In the dim past of the human race our ancestors had no place in their society for the physically unfit, and for ages the handicapped were left to die or were actually put to death. Not until recently, as time is measured, has the hard uphill fight of the cripple for his rightful place been in any way lessened or made easier for him." With this introduction, Dr. Nathaniel Allison, in the July issue of Hygeia, outlines work that is growing throughout the country to give the cripple—not charity, nor pity—but justice and a square deal. How many cripples are there in the country? According to one survey about 36,000 in New York City, which means about 300,000 in the United States. Medical and surgical service has made enormous strides in its ability to ameliorate many of these conditions and after that—what? Many still are handicapped, but, nevertheless, capable of supporting themselves and families if trained to do something for which they are fitted and given the opportunity for employment. The Rotary Clubs and the Shriners, as well as state and other private agencies are working on this problem, but there is need for greatly increased facilities. Remember this is an investment, not a charity and will bring manifold returns as well as do simple justice.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor, Madison, Neb.
R. B. Adams, M. D.,
Associate Editor, Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.
F. A. Long, Chairman Madison
W. O. Bridges Omaha
B. F. Bailey Lincoln
R. B. Adams, Ex officio Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII November, 1923 No. 11

THE 1923 CANCER CAMPAIGN

The American Society for the Control of Cancer again exhorts the members of the medical profession to renew their efforts against cancer. No public health problem can succeed without the hearty and whole-souled cooperation of the medical profession.

This society has outlined a plan of campaign to be continued by regions over the United States. Publicity was begun in Nebraska, October 15, and will be carried on by articles in all the daily and weekly newspapers over the state. This places the cancer question squarely before the public. Let every physician add his word to drive home this point: "Early recognition will save many lives." See your editor and enlist his interest in giving this vital question prominent space in his newspaper.

The State Board of Health has a splendid moving picture film entitled "The Reward of Courage", which can be secured for your community. The Woodmen of the World will use the radio to broadcast the vital points on cancer. This is a wonderful addition to publicity methods in reaching the public.

A letter to be read in churches and before fraternal orders, civic clubs and other groups, has been prepared and can be had. Let this campaign of education have your hearty support.

WHY POLLEN TREATMENT OFTEN FAILS: A BOTANIST'S VIEWPOINT

Now that the hay-fever season is over, no doubt many physicians have been disappointed with the results obtained by attempted desensitization treatment and it may be well to inquire into some of the factors which may be the probable causes.

Practically all of the houses producing biological products, from which pollens or pollen extracts can be obtained for the treatment of hay-fever, are located in the eastern part of the United States. In general, the pollens which they offer belong to the plant species which are thought to be causing pollinosis in those regions. Botanists know that plants of the same species may vary quite widely in different parts of the country, due to environmental differences. It is these varietal differences which probably account in some measure for the lack of success with the pollen extract treatment even when the particular species causing the trouble has been correctly diagnosed. To be effective the pollen extract should be made from pollen grown in the region where the patient has become sensitized.

The lists of pollen extracts offered commercially include a large number of plants which could not cause hay-fever, except by direct contact, due to the type of pollen which they produce. All important hay-fever plants have pollen which is distributed by the wind. Since it is distributed in this way, the pollen grains are very small and very light. The flowers are much reduced in size, have no nectar glands and are inconspicuous, in contrast with the flowers which are brightly colored and showy, produce nectar and have the type of pollen which is carried by insects and humming birds. Goldenrod, dandelion, sunflower and rose are included in this list of brightly colored insect pollinated plants popularly supposed to cause hay-fever, but which have been found to be of very little importance, if any, when the patients were tested with pure pollen extracts. In practically every case where the patient suffers from hay-fever at the time when these showy flowers are in season, there is also some wind pollinated grass or other inconspicuous weed in bloom in the same region which is the real causative factor, as is proved by the skin reaction and the subsequent relief when the desensitization treatment is given.

A pollen survey has been made for the

state of California in which a list of all known hay-fever plants occurring in the state is given, together with their probable importance. In addition to this, district lists are given in which only those plants are mentioned which are known to occur in abundance in the respective districts. A survey of this kind can only be made by the close cooperation of the physician and the trained botanist. If a survey of this kind were made for each state, then the physician would have some definite botanical facts to refer to in these cases, and would not be testing for plant species definitely known not to occur within a thousand miles of the patient's home and which could not possibly be the causative factor in the case. With a district list at hand, it would be quite easy for the physician to make a survey of the patient's immediate environment, for the list would be so small that the species causing the trouble could easily be selected by elimination.

One of the most important developments which might come through a pollen survey would be a pollen-extract laboratory. Here pollen extracts could be obtained which were made from the particular variety of the plant species grown in the regions where the hay-fever cases occur and made under conditions where they would be known to be free from contamination with other pollens.

—Francis L. Long.

THE MORTALITY OF SOME OF THE COMMON COMMUNICABLE DISEASES OF CHILDHOOD

It is a noteworthy fact that the morbidity and mortality of some of the acute infectious diseases of childhood have remained about the same as they were before the advent of modern methods of prevention This is largely due to the fact that they are chiefly spread through the discharges of the respiratory tract. Practically no advance has been made in the prevention of diseases spread through the discharges and secretions of the respiratory tract except in the isolated case of tuberculosis. On the other hand the decrease in diseases spread through the discharges of the intestinal and urinary tracts has been especially marked during the past twenty-five years. In this group of diseases our knowledge concerning the cause, source and mode of infection is much more exact and the problem of prevention is consequently less intricate. In the diseases in which the source of infection is the respiratory tract the problem is difficult since the modes of transmission are exceedingly numerous and the source from which infection arises, man, is difficult to control.

Measles and whooping cough are regarded very lightly by the laity and their importance is not sufficiently emphasized by the medical profession. Scarlet fever and diphtheria on the other hand, are rightly considered dangerous diseases and especial precautions are taken not only to avoid secondary complications but also to prevent the spread of these diseases. Isolation has been the measure most relied upon to prevent these infections but it has not appreciably decreased their incidence. The reason why more has not been accomplished is apparent if we stop to consider when and how isolation is put into practice. For several days in measles, and many days in whooping cough, the patient is allowed to freely mingle with others before a diagnosis is made. During this time the opportunities for spreading infection are manifold and the vast majority of those whom he is liable to infect have come in contact with him. It is this period which is particularly important as far as the transmission of infection is concerned. To wait until a diagnosis is made before isolating the patient might be compared to locking the stable after the horse has been stolen. Very rarely, however, is the patient isolated before the diagnosis is made. If in all instances patients were isolated until a diagnosis was made many cases of communicable disease would be prevented.

Since whooping cough and measles have many of the symptoms of an acute respiratory infection, resembling very closely the common cold, it is apparent that early isolation would be a very valuable measure of prevention. As a matter of fact much illness would be avoided if those suffering from the ordinary cold were isolated until all the acute symptoms have subsided.

The following table has been compiled from the mortality statistics of the United States Census for 1920:

Death Rate per 100,000 Population in the Registration Area, 1911-1920 inclusive.

Cause of Death	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	Average yearly rate
Diphtheria	18.9	18.2	18.9	17.9	15.7	14.5	16.6	13.9	14.7	15.3	16.46
Whooping Cough	11.3	9.3	10.0	10.4	8.1	10.2	10.5	16.9	5.5	12.5	10.47
Measles	10.0	7.0	12.8	6.8	5.4	11.1	14.3	10.8	3.9	8.8	9.09
Scarlet Fever	8.9	6.7	8.7	6.6	3.6	3.3	4.2	3.0	2.8	4.6	5.24
Smallpox	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.4	0.4	0.6	0.32

According to the above table diphtheria heads the list of the five diseases. Whooping cough is second, measles third, scarlet fever fourth, and smallpox fifth, the latter rate being very low. The above figures are for the registration area. Utilizing these figures as a basis it will be found that, in 1920, in the United States as a whole, the number of deaths from diphtheria was approximately 16,300; from whooping cough 13,500; from measles 9,500; from scarlet fever 5,000; from smallpox 600.

In the United States, during the past ten years, whooping cough has caused twice as many deaths as scarlet fever; measles nearly twice as many. Again when we take into consideration the fact that in both measles and whooping cough, particularly the latter, the immediate cause of death is frequently a complication of one of these diseases, the death report referring only to the complication and not including the primary cause, it is obvious that a certain number of deaths primarily due to whooping cough and measles does not appear in the mortality statistics. Many times the complicating bronchopneumonia, which is responsible for most of the deaths which occur as a result of measles and whooping cough, is given as the sole cause of death, the primary cause not being mentioned.

There should be a more wholesome fear and respect for measles and whooping cough not only in the community at large but also among the members of the medical profession. Especial efforts should be made to protect children against exposure to these diseases until they have passed the sixth year. Until more is known concerning their cause, source, and mode of transmission, our chief reliance must be placed on early and strict isolation.

—H. H. Waite.

ACUTE HEAD INJURIES

A type of head injury which requires active comprehension of its possibilities and balanced judgment in its treatment is the following: A trauma of perhaps only moderate degree, immediate or very early unconsciousness, sometimes motor restlessness, often vomiting, slowing pulse, rising blood pressure, deepening respiration, undeterminable localization, often with negative X ray evidence of fracture. Immediately after the injury the picture of shock may present itself with quickened shallow respiration, rapid pulse, low blood pressure, moist skin, pale mucous membranes and cold extremities. These symptoms may persist. If they do the injury is lethal. If, under appropriate treatment, the first described picture supervenes, time is granted the surgeon in which to inventory the liabilities and liquidate the assets his patient holds.

The symptom complex exhibited is that of increased intracranial pressure. In such injuries this phenomenon has been assumed to be due to circulatory disturbance with swelling of the brain substance. The brain lies in a non-yielding capsule, the skull. It is surrounded by cerebro-spinal fluid. Conceivably then, the pressure can be reduced through withdrawal of more or less of the fluid by spinal puncture. But this assumption is not always warranted. In many cases this procedure is valuable. In some it appears to be worthless. In a small percentage it is dangerous. It fails to recognize that in such injuries there may occur grave alteration in the secretion, circulation, and distribution of the fluid. Many times in the writer's experience the spinal manometer has failed to show the increased intracranial pressure that clinically was undeniably present. It is a long distance from the lumbar spine to the cisterna magna and there is evidence to show that even in health there is not always free communication between the fluid in the designated areas.

Blood in the fluid, often found in the condition under discussion, militates against free circulation. Admittedly, lessening spinal pressure without at the same time lessening increased intracranial pressure is apt to be catastrophic. It is not known that drainage of the spinal canal will lessen increased intraventricular tension in brain injuries. If it does not, the danger to the medulla sitting atop the foramen magnum must be clear. Moreover, investigators have shown that fluid in the lumbar region returns to its original pressure within twenty minutes even though a large quantity has been previously withdrawn. The use of spinal drainage in some cases is not condemned; but its limitations should be recognized and its dangers appreciated.

Subtemporal decompression is a procedure of recognized merit. Its indications lie somewhere between those proposed by the enthusiast who subjects every cranio-cerebral traumatism, of however slight degree, to the operation and those conceded by the laggard who employs it only in the moribund. Its employment demands caution as to indication as well as accuracy in technic. The patient being comatose no anesthetic is required. With reasonable skill there should be only a small amount of blood lost and little shock inflicted.

There remains a large percentage of cases which get well under four simple measures, i. e., icebags to the head, morphine if there is restlessness, free saline catharsis and prolonged rest in bed.

Not one, but several icebags must be kept continuously to the head. There is no contraindication to morphine. If restless, even though unconscious, the patient needs it. Sodium luminal may be substituted for the morphine in some cases. The catharsis must be active. Oftentimes marked improvement is noted very shortly following a free bowel movement. The need for bed confinement long after convalescence is established must be self evident.

If the problem be visualized, i. e., the reduction of intracranial pressure, these measures may seem temporizing and inadequate, especially when compared with the more active procedures of spinal drainage or osteoplastic decompression. But they have the merit of constant applicability and proven value.

—J. W. Duncan.

HEREDITY

The fully developed human, biologically speaking, is the resultant of all the forces with which it has contact from the fertilized ovum to the mature type. The results or end products, which are inherited, we may speak of as "constitutional", those due to environment as "conditional". Biologists use these terms meaningly and accurately as they are close students of heredity. There have always been physicians who have been fully aware of the significance of "constitutions" but the majority of medical men have been swept far away from a correct understanding of constitutional traits by the newer infectious and chemical theories of the cause of various diseases. They have been studying environment at the expense of the consideration of endogenous factors. Well do I remember five to fifteen years ago that heredity was given a very unimportant place in the etiology of certain diseased conditions and the physicians would hurry through this possibility to dwell at length on some newer theory which was hardly more than a fancy. The teaching even went farther than that, almost to the point of annihilating the "constitutional" factor in disease and certainly to make it appear as a mask for ignorance. Osler's remarks "We must keep ever in mind the kind of tubing that a man starts with", has done much to revive an interest in the study of constitutions. Of late more attention is being paid to this phase by medical men and the differentiation of just what is "constitutional" and what "conditional" is gradually being put on a more scientific basis.

One could mention many ailments which depend on the physical make-up but since heredity plays such an important part in diseases of the circulatory system, let us consider the following. We have all taken a family history in which several members of the family have died of uraemia, dropsy, angina pectoris or apoplexy and find the patient's blood pressure around 200 mm. of mercury. This is not an uncommon case history. It is important to make a thorough diagnostic survey of such a patient, but while we are investigating the kidneys, examining the blood reactions and chemistry and searching for toxins and foci of infection, let us bear in mind that the patient may come by this condition quite honestly. It may be a "constitutional" defect. We inherit different types of bodies, different colored eyes and different shaped noses, why not hearts and blood vessels which bear a similar family resemblance. It is certainly something to think about. We must learn to recognize constitution and to give heredity its proper place in etiological possibilities. It will help stabilize our treatment and prognosis of diseases. It will take us one step farther past the mechanical and routine procedures to a more thorough understanding of our patient.

The newer conception of the relation of the endocrine glands to heredity and development may prove important. The experiments by which tadpole metamorphosis is accelerated by feeding thyroid substance and retarded by feeding thymus substance is well known to all of us. We know gland disturbances occur in families. It may be that we will have the thyreotoxic constitution, hypothyreotic constitution, hyperpituitary constitution, hypopituitary constitution and so on through the various endocrine. However, to date few facts are known and about all one can say is that this relation is a fertile field for much thought and study.

—George P. Pratt.

THE PRESIDENT-ELECT MISSOURI VALLEY MEDICAL SOCIETY.

Dr. H. J. Lehnhoff, newly elected president of the Missouri Valley Medical Society, is a native Nebraskan, born in 1871 and reared on a farm near Louisville, Cass county. On reaching maturity he attended Weeping Water Academy and the State University, graduating from the latter in 1897. He attended the Northwestern University Medical School (was an interne in St. Luke's hospital) and was graduated in medicine in 1901. He has been in practice in Lincoln since 1902. He has taken post-graduate work in different medical centers in this country and spent four months in Vienna and some time in London. During recent years he has devoted himself principally to diagnosis.

A PHASE OF THE PSYCHOLOGY OF THE SICK OFTEN OVERLOOKED.

It may in truth be said that the psychology of the patient is not studied enough or is overlooked by the average physician. A peculiar phase of this is exemplified by a personal experience. The doctor-patient was being visited by his physician twice a day. One evening the physician failed to make his usual call. The patient knew he was getting along all right, knew there was no need of the physician calling that evening, but he had been accustomed to expect the physician's call at about that hour and he missed something. How much more then will the lay-patient miss the expected call?

ABOUT MYOCARDITIS.

DaCosta says: "The diagnosis of acute myocarditis is more a matter of deduction than a question of physical signs. * * * The physician who fails to diagnose acute myocarditis should not censure himself too severely for his lack of diagnostic acumen. * * * Cabot says 26 per cent of cases of fibrinous myocarditis are found post mortem which had not been diagnosed during life; that 52 per cent of the cases diagnosed during life were not found post mortem; and that in only 22 per cent did the clinical diagnosis and the autopsy findings agree."

SALT, NOT A NECESSARY ARTICLE OF DIET.

Vilhalmur Stefansson, the arctic explorer, says:

"Most people are in the habit of looking upon the articles of our accustomed diet, and especially upon salt, as necessities. We have not found them so. The longer you go without grain foods and vegetables the less you long for them. Salt I have found to behave like a narcotic poison—in other words it is hard to break off its use, as it is hard to stop the use of tobacco; but after you have been a month or so without salt you cease to long for it, and after six months I have found the taste of meat boiled in salt water distinctly disagreeable."

EDITORIAL PARAGRAPHS

The 1924 session of the American Medical Association is scheduled for May 19-24, at Chicago.

Seventy-five cases of poliomyelitis were reported to the state Department of Health and Welfare up to September 26, thirty-two being in Omaha.

The next new thing in medicine will be the cardiac clinic. Already New York city has one, and two other places in the empire state have taken up the work. The Association for the Prevention and Relief of Heart Diseases fosters the clinics.

Almost every month the editor sees errors of typography, spelling and construction in the Journal after the magazine is published and as a consequence hates himself for the period of the next moon. Joshua Crabapple has an encouraging word, however: "If no one ever made a mistake, they wouldn't put erasers on lead pencils."

Less than three years ago Nebraska took its place in the vital statistics registration area of the United States. Your editor is permitted to state that due to the splendid cooperation and unselfish public spirit of the physicians the Vital Statistics Division compares most favorably with those states that have had the registration law much longer than Nebraska. Because of the fine method of keeping the records and the efficient follow-up work, this Division serves as a model for other states.

"DOCTOR GRANDPA" AND HIS JUNIOR PARTNER IN CONSULTATION.

EXAMINATIONS FOR LICENSURE IN NEBRASKA, JUNE 6-8

Examination in nine major subjects.

107 applicants appeared for examination.
73 took the entire examination.
16 took the Senior examination only.
18 took the Segregated examination only.
88 licenses were issued to applicants taking the examination.
1 applicant for examination had been previously licensed by Waiver.
12 reciprocal licenses were issued.

Of those taking the examination, 52 were graduates of the University of Nebraska, 34 of the Creighton University, 1 of Harvard University, Boston, and 1 of Washington University, St. Louis, Missouri.

—H. J. Lehnhoff, Sec.

BEWARE OF THE OBSTETRIC TABLE FAKIR

Complaint, accompanied by a mass of correspondence from victims, has reached the Journal, that a certain man representing himself as an agent of a firm manufacturing a portable obstetric table, had solicited orders and obtained money from several physicians in the Republican valley for tables and that the tables were never delivered. The man is about 32 years of age, height 5 ft. 9 ins., weight 175, complexion and hair light, eyes blue, American, scar under right eye.

THE SOCIETIES.

The Joint Meeting of the Elkhorn Valley and Fourth Councilor District Medical Societies was held at Norfolk, September 25. Dr. C. E. Sayre, Norfolk, read a paper on "Cancer of the Breast"; Dr. Miles J. Breuer, Lincoln, "The Psychology of Treatment in Tuberculosis"; Dr. O. M. Gilbert, Boulder, Colo., "Problems in the Management of Tuberculosis"; Dr. H. J. Lehnhoff, Lincoln, "Disturbed Gastric Function from Nervous Influences." Owing to road conditions the attendance was cut in half. The meeting was limited to an afternoon session. Much interest was manifested in the papers read.

The Lancaster County Medical Society opened the season of 1923-24 by a meeting October 6, at the Orthopedic hospital. The meeting was devoted to case reports.

Seventy doctors attended the **Ninth Councilor District Medical Society** meeting at Kearney, September 25. Dr. Louis Wine Bremmerman of Chicago read a paper on "General Urological Diagnosis"; Dr. W. J. Arrasmith, Grand Island, "Some Lesions of the Right Kidney"; and an address was given by the president, Dr. L. M. Stearns. There was golf playing in the late afternoon, a banquet in the early evening and the program followed. Dr. B. R. McGrath, Grand Island, was elected president, and Dr. R. C. Woodruff, Grand Island, secretary-treasurer.

The annual meeting of the **Fifth Councilor District Medical Society** was held at Blair, October 17. Following was the program:

Dr. Lucien Stark, Hartington, "The Use of Sodium Iodide Intravenously"; Dr. Homer Davis, Genoa, "Compound Fracture of Tibia, with Demonstration of Case"; Dr. C. A. Roeder, Omaha, "A Resume of Inflammatory Conditions in the Right Upper Abdomen"; Dr. H. J. Lehnhoff, Lincoln, "Disturbances of Gastric Function"; Dr. A. D. Dunn, Omaha, "The Treatment of Diabetes Mellitus"; Dr. A. P. Overgaard, Omaha, "X-Ray Interpretation of Sacro-Iliac Injuries"; Dr. W. H. Benson, Oakland, "Intestinal Infection."

Entertainment for the visiting ladies was provided by the wives of the Blair doctors.

The Surgical Club of Omaha at a meeting October 16, attended by fifty surgeons, a number from points out in the state, had as guest of honor and speaker

Dr. A. E. Hertzler, Kansas City, who spoke very forcibly of group practice and of fee splitting.

The annual meeting of the **Third Councilor District Medical Society** was held at Table Rock, October 23. Program follows:

"Facts About the Circulatory System", B. F. Lorance, M. D., Auburn; "Management of Acute Sinus Infections", J. C. Tucker, Beatrice; "Shepard-Towner Work in Nebraska", Miss Beachley, State Dept. Health and Welfare; "Head Injuries", C. A. Hull, M. D., Omaha, J. S. Welch, M. D., Lincoln; "Mouth Examinations", F. W. Webster, D. D. S., Lincoln; "Practice of Medicine Yesterday, and Today", Morris Nielsen, M. D., Blair; "Insulin Therapy," John M. Mayhew, M. D., Lincoln, Frank Conlin, M. D., Omaha; "Collections", W. R. Boyer, M. D., Pawnee City; "Vaccinations", A. P. Fitzsimmons, M. D., Tecumseh; "Modern Conception of Eczemas," A. J. Smith, M. D., St. Joseph.

FOR SALE.

Dr. L. W. Wuesthoff, recently of Madison, Nebr., has moved to California on account of his wife's health. His combined office and residence property for sale for $9,500. B. and L. will carry $5,000, balance cash.

Madison is a county seat with 2,000 population, very best farming community. Fine chance for a physician. Practice good for at least $6,000 a year. Also a portable operating table, McIntosh Wall Plate and air-tank for sale.

Communicate with Dr. F. A. Long, Madison, Nebr., in whose charge property has been left.

NOTES ABOUT THE DOCTOR.

Dr. C. N. Moore has sold his Sutherland interests and will locate elsewhere.

Dr. J. W. Youngman, formerly of Holbrook, has located at Wiggins, Colorado.

Dr. L. E. Dickinson and wife, Ravenna, are taking a vacation on the Pacific coast.

Dr. R. C. Byers, formerly of Nickerson, has located in Fremont succeeding Dr. A. Sinamark.

Dr. and Mrs. Glenn Miller, Omaha, made a hunting trip to the western part of the state in October.

Dr. E. N. Smart, Madison, has been visiting in southern California since the first of September.

Creighton University College of Medicine registered 165 students at the beginning of the school year.

Over 300 students have registered at the University of Nebraska College of Medicine for the school year.

Dr. R. Striegal and Dr. Lucille McConnell, formerly of Buffalo, N. Y., have opened offices in Sutherland.

Dr. E. C. Goodrich, police surgeon of Los Angeles, visited at Cozad recently. Many years ago he resided at Cozad.

Dr. E. L. McCrea of Table Rock after a long illness and a surgical operation is reported well on the way to complete recovery.

Dr. Olga Stastny, who has been in foreign relief service since 1919, has returned to this country and will resume practice in Omaha.

The most profound sympathy of the profession goes to Dr. and Mrs. A. D. Dunn, Omaha, over the loss of their son, from poliomyelitis.

Dr. H. I. Shull, Auburn, pioneer physician, for many years a leading practitioner in that part of Nebraska, is retiring at the age of 83.

Dr. Karl R. Werndorff, for many years an assistant to Dr. Adolph Lorenz, at Vienna, has located at Council Bluffs to do orthopedic surgery.

Dr. C. H. Platz, Torrington, Wyo., well known in western Nebraska, is taking postgraduate work in St. Louis and will locate in Casper, Wyo.

Dr. L. W. Wuesthoff, for the past six years a practitioner at Madison, has moved to California and for the present at least will be at Atascadere.

Dean Irving S. Cutter of the University of Nebraska College of Medicine has gone to London to attend the international medical congress.

Dr. E. I. Whitehead, Holdrege, after a period of post-graduate study has reopened his office and will hereafter do eye, ear, nose and throat work.

Dr. W. E. Wolcott, for a number of years associated with Dr. J. P. Lord and Dr. R. D. Schrock, Omaha, has moved to Des Moines where he will do orthopedic work.

Dr. Clayton E. Andrews, a native of St. Paul, Nebr., a medical veteran of the World War, for the past four years associated with the Mayo Clinic, has located at Lincoln.

The profession will be interested to know that Dr. Norman T. Johnston, Kearney, was elected secretary-treasurer of the American Electronic Research association at a recent meeting in Chicago.

Dr. Hugh E. Mantor, for the past year located at Denver and engaged in X ray work, has returned to his former location, Sidney, where he will be associated with his brother, Dr. Harry L. Mantor.

Dr. C. E. Remy, for several years connected with the Norfolk State Hospital, has taken a position at the South Dakota institution for insane at Yankton and has been succeeded by Dr. W. W. Hedlund, of the Hastings State Hospital.

Drs. R. L. Smith and E. W. Rowe of Lincoln, Drs. J. F. Kelly, C. H. Ballard and A. P. Overgaard of Omaha, attended the twenty-third annual meeting of The American Roentgen Ray Society in Chicago recently. The meeting next year will be held at Boston.

Dr. Julius Lingenfelder, for quite a number of years a practitioner in north Nebraska, recently located at Beemer, has moved to a suburban place near St. Louis where he has acquired suitable property and will hereafter conduct a sanitarium in fulfillment of his lifetime ambition.

HYMENEAL.

Dr. A. C. Barry and Miss Gretta McClow, Norfolk, were married at Council Bluffs, early in October.

Dr. Claude R. Laird and Miss Emma Krula, Blue Hill, were married at Kearney, Sept. 5.

Dr. J. J. Bruce and Miss Winifred Travis, Omaha, were married Sept. 4. Dr. Bruce is at present associated with Dr. D. A. Walker, at Mullen.

NECROLOGICAL.

Dr. John W. Robinson, graduate of the Iowa University College of Medicine, 1884, pioneer physician and druggist at Guide Rock, died at the latter place Sept. 18, of sarcoma of the face, aged about 71. He had not been in active practice for some years.

Dr. A. A. Ward, Phillips, Northwestern Medical

College, St. Joseph, Mo., 1882, was found dead under his overturned car after a severe storm, Sept. 27, aged about 65.

Dr. Alfred Crane, for many years a practicing physician of Brownville died in Richmond, Va., where he had been visiting, August 24, aged 67. He was a graduate of the Northwestern Medical College, St. Joseph, Mo.

Dr. J. B. Martin, Plattsmouth, Bennett Medical College, Chicago, 1877, died August 22, aged about 76.

Dr. G. S. Catlin, Hartville, Wyo., well known pioneer physician on the Nebraska-Wyoming border, died Sept. 9.

LESSONS TO BE LEARNED FROM THE RESULTS OF TONSILLECTOMIES IN ADULT LIFE

Three hundred and forty-five persons without tonsils were questioned by Walter C. Alvarez, San Francisco (Journal A. M. A., May 26, 1923), as to the reason for removal of tonsils and the result. The most striking fact to come out of this study is that those who had had much tonsillitis were practically always greatly helped, while those who had had no tonsillitis or sore throat were rarely pleased with their results. Those who had a moderate amount of sore throat sometimes were helped and sometimes were not. In adults, it pays best to remove tonsils for recurring tonsillitis and sore throat; it does not pay so well to remove them for frequent colds; and still less does it pay to remove them on general principles, or because the patient is run down and nervous, or because he has headaches, deafness, otitis media, enlarged glands in the neck, stomach troubles, or bad breath. Alvarez calls particular attention to the poor results obtained after the removal of tonsils simply because something could be squeezed out of them, or because they looked infected. Only ten of the thirty-two in this group could see any improvement, and not one of them was satisfied with the result obtained. In this series, the results of removal for "rheumatism" were poor, only seven of forty-seven reporting a cure, and five reporting improvement. In a good many of those cases in which arthritis was partly relieved or was uncured, it was so mild that the patient really consulted Alvarez about something else. In a large proportion of cases, had a careful examination been made at the start, the tonsillectomy would not have been done. Thus, in several instances, even a cursory examination would have shown that the enlarged glands in the neck, for which the operation was advised, were secondary to carcinoma elsewhere, or that they were manifestations of a widespread Hodgkin's disease. On the other hand, in many of the cases, especially those of physicians and their relatives, the rooting out of focal infections had been, if anything, too thorough. One man had parted with his tonsils, all of his teeth, his gallbladder, his appendix and his prostate, and still he suffered from a disease which, so far as is known, may have had nothing to do with any infection. It is not so much what the adult tonsil looks like, but what it does that counts, says Alvarez. Unless it is inflamed enough to cause sore throat and tonsillitis occasionally, the chances are against the patient's being much benefitted by its removal. Furthermore, if the patient suffers from repeated attacks of tonsillitis, he will almost always be grateful for the operation, even if he fails to get relief from some other trouble. Tonsillectomy should not be done for the relief of troubles outside the throat until the patient has been studied very carefully by a competent internist. Few promises should be made if some chronic disease is found elsewhere in the body. Conservatism should be the rule except in those cases in which the patient is seriously menaced, or in which there are good reasons for believing that the disease is one that can be influenced by the removal of focal infections.

THE TREATMENT OF DIABETES MELLITUS WITH INSULIN

Ralph H. Major, Kansas City, Kan. (Journal A. M. A., June 2, 1923), reports on the successful use of insulin in cases of severe juvenile diabetes, in the treatment of diabetic coma and in lowering the blood sugar in cases of diabetes. His studies indicate that 1 unit of insulin takes care of approximately 2 gm. of carbohydrate in the diet. The study of the urinary output has shown commonly that a polyuria of from 3,500 to 5,500 c. c. in twenty-four hours is present with an absence of glycosuria. Such large amounts of urine, however, were coincident with high values for blood sugar, although the ratio between the two was not constant. In only one patient was sodium bicarbonate used. It had no apparent effect on the acidosis. In two patients he has seen symptoms of collapse, accompanied by profuse sweating and a sense of great oppression and fear, three hours after the injection of 15 units of insulin. One of these patients was given 20 gm. of glucose by mouth, and recovered promptly. The second patient recovered quite suddenly from his collapse, without treatment. This attack occurred during the night, and the blood sugar the following morning at 8 o'clock was 50 mg. per hundred cubic centimeters. Both patients had a hypoglycemia when studied soon after these symptoms. This experience emphasizes that caution must be exercised in the use of this preparation. Patients treated with insulin have shown a prompt rise in carbon dioxid tension. The marked lipemia often present in diabetes disappeared rapidly under treatment.

THE ROUTINE TREATMENT OF DIABETES WITH INSULIN

Successful treatment of diabetes with insulin, Elliott P. Joslin, Boston (Journal A. M. A., June 2, 1923), says, depends on the utilization of all those measures that have proved of the greatest value in the treatment of diabetes without insulin. These are: adherence to a diet which will keep the urine sugar-free; avoidance of overnutrition or extreme undernutrition, and a method of life compatible with the stength such a diet affords. A knowledge of the fundamental principles of the diet and of the values of a few foods is essential; otherwise the insulin will be squandered and the patient placed in jeopardy. Insulin does not cure diabetes. Insulin does not allow a diabetic to eat anything he desires. It is cruel for prominent individuals to make such statements and arouse false hopes. It is true that heretofore there has never been anything discovered as valuable for the diabetic as insulin but diabetes, though subdued, is not yet conquered. Intelligent patients can be taught the use of the diet and insulin in a week, and in two weeks the average patient can become free of acid and sugar, and learn what is requisite either in hospital or in boarding house, or with a nurse trained in the care of diabetics in his own home. Insulin can be discontinued in a small fraction of cases. Those patients may be able to omit it who receive it temporarily because of an exacerbation caused by complications, or whose diabetes is of recent onset, though perhaps the latter should receive it intermittently as a prophylactic against increasing severity.

"The hospital question is a vital one. As it is now, if the country doctor takes a patient to a hospital in a city the surgeon gets the big fee, and after the hospital costs are paid there is often little or nothing for the home doctor."—Cracraft, Atlantic Medical Journal.

"Then there is the lack of loyalty among his clientele. They visit specialists, so called, when the roads are good and the weather fair, and pay cash; but when the nights are dark, the roads bad and the weather inclement, they call the home doctor and perhaps never pay him."—Cracraft, Atlantic Medical Journal.

"The silent reverence with which our many readers peruse its pages—silent because we seldom hear from them—is the indubitable proof from which we gain the satisfaction of knowing that our work is appreciated "—Ed., Atlantic Medical Journal.

BOOKS RECEIVED

Practical Dietetics. With Reference to Diet in Health and Disease. By Alida Frances Pattee. 14th Edition. Cloth. Price $2.60. Pp. 687. Mt. Vernon, N. Y.: A. F. Pattee, Publisher. 1923.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. By leading members of the Medical Profession throughout the world. Edited by Henry W. Cattell, A. M., M. D. Cloth. Pp. 304 with illustrations. Philadelphia and London: J. B. Lippincott Company. 1923.

General Medicine. Vol. I. The Practical Medicine Series. Under the general editorial charge of Charles L. Mix, A. M., M. D. Cloth. Pp. 678 with illustrations. Series 1923. Chicago: The Year Book Publishers.

Obstetrics for Nurses. By Charles B. Reed, M. D. Cloth. Price $3.50. Pp. 399 with illustrations. St. Louis: C. V. Mosby Co., 1923.

Chemistry for Nurses. By Fredus N. Peters, A. M., Ph. D. Cloth. Price $2.50. Pp. 302 with illustrations. St. Louis. C. V. Mosby Co. 1923.

Principles of Bacteriology. By Arthur A. Eisenberg, A. B., M. D. Cloth. Price $2.25. Pp. 214. St. Louis: C. V. Mosby Co. 1923.

Physiotherapy Technic. A Manual of Applied Physics. By C. M. Sampson, M. D. Cloth. Price $6.50. Pp. 443 with illustrations. St. Louis: C. V. Mosby Co. 1923.

Nursery Guide for Mothers and Nurses. By Louis W. Sauer, M. A., M. D. Cloth. Price $1.75. Pp. 188 with illustrations. St. Louis: C. V. Mosby Co., 1923.

A Clinical Guide to Bedside Examinations. By Dr. H. Elias, Dr. N. Jagic and Dr. A. Luger. Arranged and Translated by Wm. A. Brams, M. D. Cloth. Price $1.50. Pp. 135. New York: Rebman Company.

Optotypes. Consisting of Test-Letters and Pictographs for Measuring the Acuteness of Vision. By John Green, M. D., Ll. D. and A. E. Ewing, A. M., M. D. St. Louis: C. V. Mosby Co., 1923.

INDEX NUMBER

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, December, 1923. No. 12

CONTENTS

Page

Non-Surgical Drainage of the Biliary Tract, Arthur L. Smith, A. B., M. D. M. Di., F. A. C. P., and Clara McMahon, A. B. 421

Indication and Surgery of Caesarean Section, George P. Shidler, M. D. 428

Your State Journal 432

Indications for the Administration of Insulin, John Mills Mayhew, A. M., M. D., F. A. C. P. 433

The Relation of Upper Respiratory Infection to Certain Chronic Diseases of the Chest, J. C. Thompson, M. D. 436

Acute Empyema, Herbert H. Davis, M. D. 438

Intra-Ocular Sarcoma, E. C. Foote, M. D. 443

Two Cases of Fibromyomata, Rudolph Rix, M. D. 447

The Old-Time Physician 449

Page

EDITORIALS—

The End of Volume VIII 450

The Conference of State Secretaries and Editors 450

Clinical Congress, American College of Surgeons. Tenth Annual Meeting 450

The Tri-State Medical Meeting 451

Helping Each Other 452

The Economics of Medicine and Surgery 453

The Societies 454

Notes About the Doctor 455

Hospital Notes 456

Hymeneal 456

Necrological 456

NON-SURGICAL DRAINAGE OF THE BILIARY TRACT.

Arthur L. Smith, A. B., M. D. M. Di., F. A. C. P., and Clara McMahon, A. B., Lincoln, Nebr.

Any method which tends to make the diagnosis of biliary tract infections more accurate and which reduces the number of operations upon this apparatus should be given a thorough trial by the medical profession before it is condemned. The condemnation of any new method without giving it a careful, unprejudiced trial is often the attitude taken by many of our so-called conservative medical brethren, and this can always be anticipated no matter how much merit it may have.

It is a physician's function to make sick people well, and whether this is done by accurately known scientific methods or by empiric means is of little moment.

Enthusiasm in medicine is the greatest stimulus to its advancement, and those who have it should be commended and given every possible assistance to improve our sadly lacking knowledge of methods of restoring diseased organs to their normal condition. We believe we have given the Lyons-Meltzer technique a fair trial and after over three thousand drainages we feel we are in position to draw a conclusion concerning its value in the diagnosis and treatment of cholecystitis, cholangitis, choledochitis, hepatitis, stasis of any part of the bile tract and incidently duodenitis. We have described elswhere (22) the technique used by us in non-surgical biliary drainage.

HISTORY

In 1917 Meltzer(1) announced that a magnesium sulphate solution injected into the duodenum without coming into contact with the gastric mucosa stimulated the flow of bile and he added this might be of definite clinical value. Lyon(2) put this suggestion into practice and in 1919 made his first report on the diagnosis and treatment of abnormalities of the biliary system. To this we might add that olive oil, hydrochloric acid, peptone and other substances have caused a flow of bile when administered in the same manner. Also many patients excrete the three types of bile upon the passing of the duodenal tip into the duodenum and without injection of any solution.

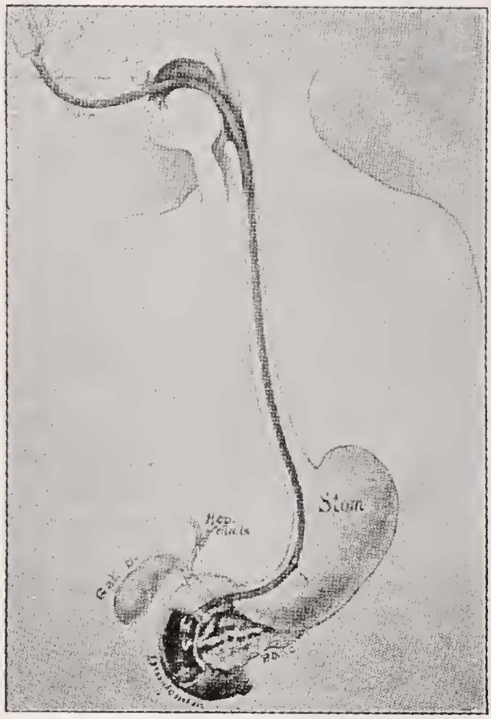


Figure 1. Duodenal bulb in duodenum (after Smithies).

PHYSIOLOGY OF THE BILIARY SYSTEM

Meltzer believes the sphincter of the common bile duct and the muscles of the gall-bladder are innervated by inhibitory and motor fibers from the splanchnic and vagus nerves, so when the sphincter of Oddi relaxes the gall-bladder contracts and vice versa, when the sphincter contracts the gall-bladder relaxes. From the action of this delicately balanced mechanism he has promulgated the law of contrary innervation.

The normal gall-bladder is capable of contracting(3) and this tends to force the contained bile into the ducts and duodenum. The undistended gall-bladder has a capacity of fifty mils and this can be increased comfortably to two hundred mils(4) or about one-fifth of the total secretion for twenty-four hours. Clearly its function is that of a reservoir between the periods of active digestion. It has not the power to overcome the resistance of the sphincter of Oddi but when the latter with the duodenal mucosa is relaxed by the products of digestion and gastric secretions the bile flows freely from the gall-bladder. The bile in the gall-bladder is being constantly concentrated as shown by Rous and McMaster(5) and Haver, Hargis and Van Meter(6). They have demonstrated its contents to be eight times as rich in solids as that from the hepatic ducts, and also that in twenty-two hours the gall-bladder concentrated forty-nine and eight-tenths mils of bile to four and six-tenths mils. Doree(37) and his associates have shown the cholesterol in the bile is absorbed, excreted and reabsorbed. Starling (40) states the concentrating function of the gall-bladder does not affect all solids alike since sodium taurocholate is concentrated 16 times, sodium glycocholate 20 times, but cholesterol only 10 times. It would appear from this, the gall-bladder is the cholesterol absorbing portion of the biliary system. Boyd(38) believes a subsidiary function of the gall-bladder is the production of mucus. Normally the bile is diluted in the hepatic ducts by the "white bile" of Rous and McMaster. Normally as the intra-duct pressure is increased the bile is forced into the gall-bladder which dilates and acts as a pressure equalizer. The norm-

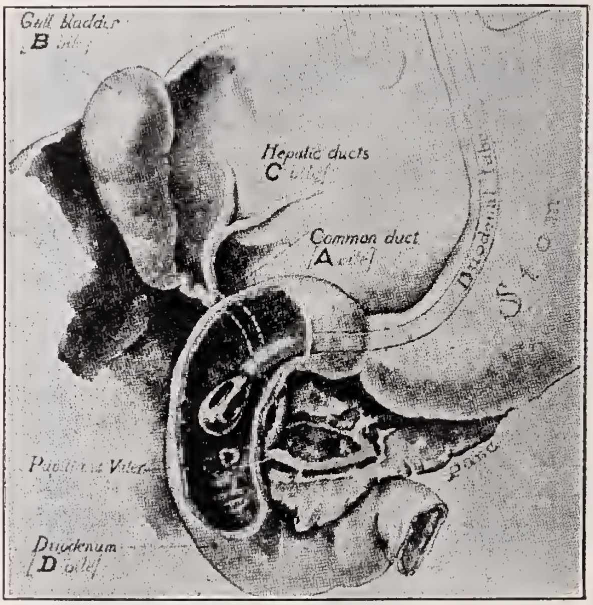


Figure 2. Areas from which bile fractions are secured. A. Common bile duct portion. B. Gall-bladder portion. C. Portion from hepatic ducts and branches. D. Duodenal content (after Smithies).

al pressure in the common ducts before the sphincter of Oddi dilates is, according to McWhorter(7) one hundred to one hundred and fifty millimeters of water pressure, and since the pressure of a fluid is transmitted alike in all directions it would be reasonable to believe the intra-gall-bladder pressure, when the cystic duct is patent, would be approximately the same. Also fluid flows in the direction of least resistance, so when the gall-bladder pressure is lower, the flow is in that direction and vice versa, when the intraduct pressure is lower the flow is toward it. With the sphincter of Oddi closed the current of the bile is toward the gall-bladder where the pressure is being continually reduced by the concentrating function of that organ. When the sphincter of Oddi dilates bile escapes into the duodenum from the common duct, thus decreasing the intra-duct pressure, then, naturally the flow of the bile is from the gall-bladder and the hepatic ducts into this area of lowered resistance.

CHANGES IN INTRA-DUCT PRESSURE

McWhorter has shown that the injection of twenty-five per cent magnesium sulphate into the duodenum reduces the resistance of the sphincter of Oddi fifty to one hundred millimeters water pressure, and naturally this allows it to dilate more easily than normally. If this is true, lowered pressure in the common duct must follow and it is reasonable to believe a current of bile from the gall-bladder and hepatic ducts will be toward this area of lowered resistance. This is without taking into consideration the theory that the gall-bladder itself has the power to contract. We, therefore, can see no reason to consider the contraction of the gall-bladder is necessary to recover "B" bile. It may be said the gall-bladder bile may be too thick to flow in this manner but we have seen bile the consistency of molasses in the drainage bottles several times.

SOURCE OF "B" BILE

Einhorn(8), Dunn and Connell(9) have said the dark color and the increased density of the "B" bile is due to the magnesium sulphate solution. This cannot be true for we have seen thick, viscid, black bile appear many times after the duodenal tip passed into the duodenum and before any fluid had yet been injected. Also it has often appeared after the injection of dilute hydrochloric acid through the duodenal tube. We have a complete record of fifty-two of these cases and in no way does this bile differ from that following the injection of magnesium sulphate. We have mixed yellow bile from the hepatic ducts with magnesium sulphate solution many times and at no time have we seen a darker bile result, but on the contrary it became lighter in proportion to the dilution. Now since this dark bile is more concentrated than the other two biles and since it is wholly admitted that normally the gall-bladder is the only concentrating part of the biliary system then it must be admitted this dark concentrated bile comes from the gall-bladder in normal cases. Bochus(10) has shown the cholesterol content in normal "B" bile is about three and one-half times that in the normal "C" bile, while in abnormal conditions the former is about eight times that in the latter. This is another proof that "B" bile comes from a concentrating viscus. Luckett(41) in six cases at operation recovered "B" bile after pressure on the gall-bladder. Sachs(11) saw the gall-bladder collapse in two cases at operation after the duodenal instillation of magnesium sulphate and recovered "B" bile in each instance.

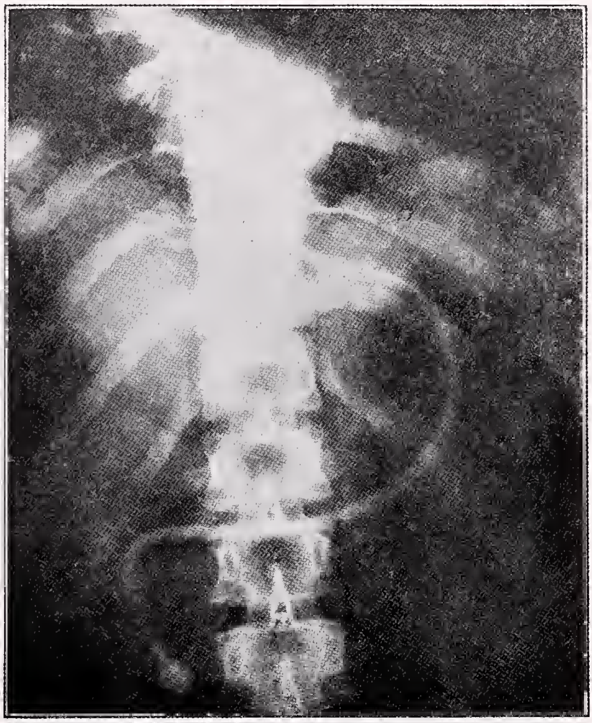


Figure 3. Bulb in duodenum and the normal duodenal curve.

White(12) believes the absence of "B" bile is due to occlusion of the cystic duct.

Whipple(13) has shown bacteriologically

the similarity between the "B" bile and the bile in the gall-bladder. He believes these to be from the same source.

The quantity of dark bile recovered at times has been very large, in fact, more than a gall-bladder could contain. This can easily be true for when the gall-bladder bile is very concentrated, it can be diluted with a large amount from the liver and still be dark and concentrated enough to give the appearance of an undiluted "B" bile.

We have at times diluted black, thick bile with ten parts of yellow bile without making much change in its color or viscosity.

After "C" bile has appeared and the gall-bladder has only been partially emptied the re-instillation of magnesium sulphate will often be followed by more "B" bile.

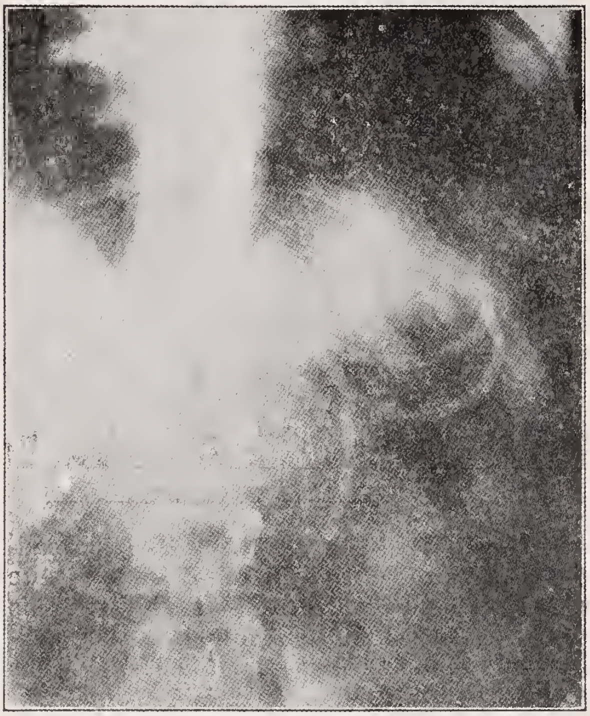


Figure 4. Duodenal tube curled up in the stomach.

We do not believe we can recover undiluted gall-bladder bile, but we feel that we can drain the entire patent biliary system and separate it fairly well into the three different types and since the gall-bladder is the only concentrating organ in the biliary system, the "B" bile or concentrated portion must come from it.

SOURCE OF "B" BILE IN CHOLECYSTECTOMIZED PATIENTS

Because "B" or dark bile is recovered in patients who have no gall-bladder it has been assumed the source of it is other than the gall-bladder in persons still retaining that organ. However, the work of Eisendrath and Dunlavy(14) has clearly shown beyond any doubt that after the gall-bladder has been removed the cystic, common and hepatic ducts begin to dilate and in a few weeks (Figure 6 to11) have assumed the reservoir function of the gall-bladder.

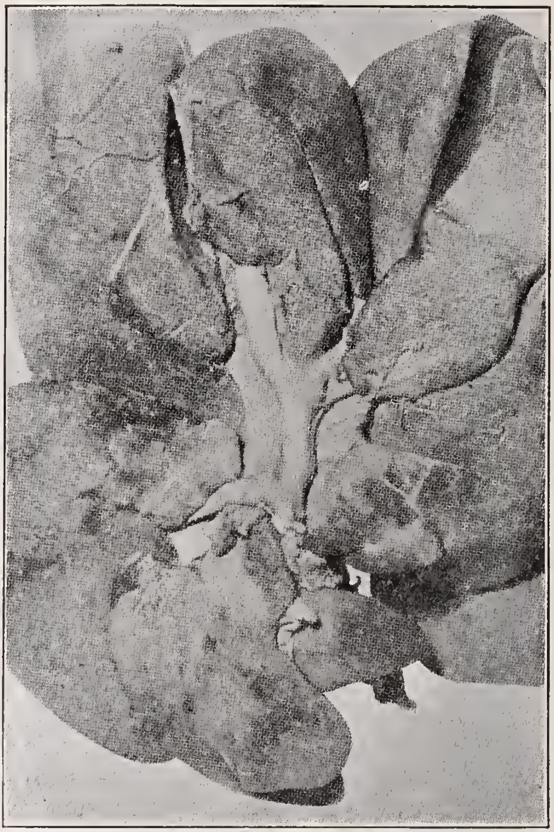


Figure 5. Dilated hepatic and common ducts 214 days after cholecystectomy. (Judd and Mann.)

Rous and McMaster(15), Hartman and Smyth(16), Judd and Mann(17), (Figure 5), Oddi(18), DeVoogt(19), Haberer and Clairmont(20) have also reported that after the gall-bladder is removed the hepatic and common ducts dilate and assume the container function of the extirpated viscus.

Now if this is true why cannot this new reservoir concentrate as well as other non-absorbing tissues do when a mass of fluid accumulates in them. There is not a soft tissue in the body which cannot absorb fluid so why should this newly formed gall sac be an exception. Then if water is absorbed from the bile when under pressure in this sac it must become concentrated and assume "B" bile appearance and consistency. Examples of absorption in wholly secreting organs may be found in any tissue covered with mucous membrane as in pyosalpinx, menstrual fluid in a non-patent vaginal canal, and the concentration of parotid gland secretion when its duct is stenosed. Like cases without number are too familiar to mention. When the cystic duct is closed by a stone or constricted from infection or external pressure, it would seem the cystic and hepatic ducts would dilate the same as in the patient with no gall-bladder. If only the hepatic ducts were left there is no reason to assume they would not dilate the same as when the common duct is functioning. Bochus(10) has seen a patient drained by the duodenal method a few days after a cholecystectomy and there was no dark bile recovered. Johnson(21) says he could not recover "B" bile immediately after cholecystectomy where he could before the operation. Smithies reports agree with that of Johnson. This would only be true, however, in patients whose ducts were not dilated before the operation. This shows there is no "B" bile present before the ducts have time to dilate.

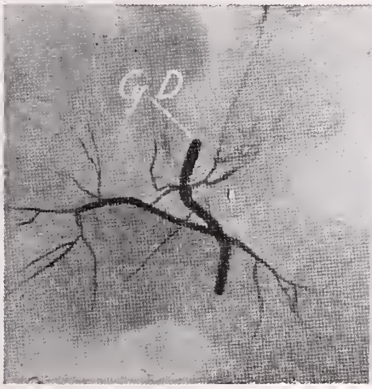


Fig. 6

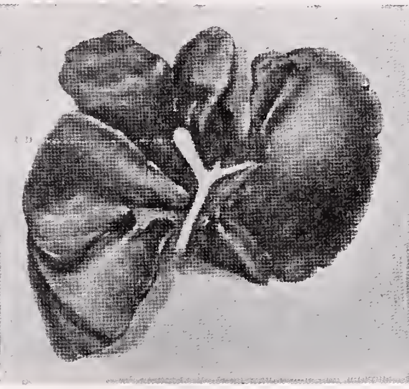


Fig. 7

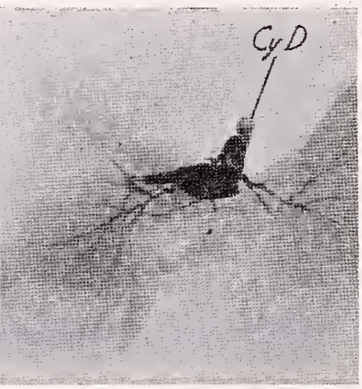


Fig. 8

Figure 6. Cystic duct (Cy. D.) one week after removal of gall-bladder of dog at its junction with the cystic duct.

Figure 7. Appearance of cystic duct (C. D.) two weeks after the removal of a dog's gall-bladder. Note the formation of a new gall-bladder in the stump of the cystic duct.

Figure 8. Appearance of dilated cystic duct (Cy. D.) two weeks after cholecystectomy in dog.

DIAGNOSIS

Lyon(2) has assumed the first bile ("A" bile) recovered is mostly from the common duct, the second, darker and more viscid ("B" bile) is mostly from the gall-bladder and the third, light yellow and thinner ("C" bile) has been recently secreted by the liver.

If trouble is encountered in entering the duodenum it may be due to vagotonic states or local pylorospasm conditions due to duodenal ulcer, cholecystitis, chronic appendicitis, to obstructions, gastroptosis or wrong technique. Atropin will overcome the pylorospasm.

In a paper written two years ago we(22) stated as a diagnostic procedure this method was of no great value, but with a greater experience we now feel it is a great diagnostic aid in disease of the duodenum and gall tract. We feel this method must not be used alone, but only in conjunction with a complete general examination and all necessary special investigations.

DUODENITIS. Pus cells, bacteria in wet and stained smears, epithelial cells, and chemical changes in the duodenal contents are present in this condition.

CHOLEDOCHITIS. If the duodenal contents are normal and the first bile ("A") contains inflammatory products—pus cells, epithelial cells, bacteria in smears—we feel there is an infection in the common duct.

CHOLECYSTITIS. When the duodenal and common duct contents are normal and the dark bile ("B") contains pus cells, desquamated epithelial cells, organisms in smears, an increased proportional cholesterol content, and is thick and viscid, we believe we are justified in making a diagnosis of cholecystitis.

CHOLELITHIASIS. Stones in the gall-bladder cannot be diagnosed by this method but in the presence of a chronic cholecystitis they must be excluded by other means.

CHOLANGITIS. Since this condition is usually present with infections of other parts of the tract, its presence may be assumed.

HEPATITIS. Graham(23) has shown hepatitis of greater or less degree is present in all cases of gall-bladder infection coming to operation.

In the absence of any color change in the bile, after three drainages, we believe it is fair to assume an occlusion of the cystic duct.

Since in the first 100 cultures taken by us all showed the presence of bacteria, we do not make cultures from any portion of the bile. The flakes and shreds in the bile are transferred to slides for microscopic studies and the pathological products, if any are present, will be found in these masses.

COMPARED WITH SURGICAL DRAINAGE

It has been said by many surgeons that since the infection often manifests itself deep in the tissues, which results in a marked thickening, drainage by this method will be of little value. In the surgical ranks, from a perusal of all the literature, one is struck by the lack of unanimity as to the relative value of cholecystectomy or cholecystostomy. In talking with many surgeons and from the available literature we have come to the conclusion they are about equally divided on this question. Since an infection of the gall-bladder without infection in the ducts is rare we cannot see how either operation will clear the entire trouble. Outside of incising or extirpating the gall-bladder the surgeon does no more than drain the biliary system. He has no other method of clearing the infection. Now if this this is true, why can drainage through the abdominal wall plus an operation and resultant abdominal adhesions be preferred to a method which does the same without operation? Since it is admitted by surgeons and physicians alike that by the Lyon method the common and hepatic ducts can be drained then why in cholangitis and choledochitis can a tube through the abdominal wall into the gall-bladder do more?

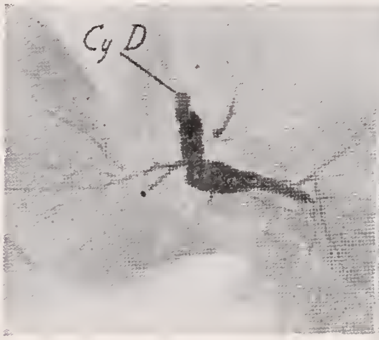


Fig. 9

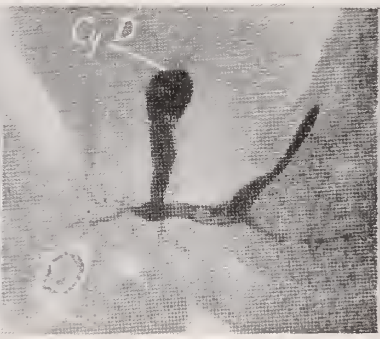


Fig. 10

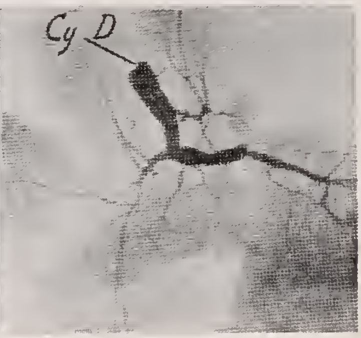


Fig. 11

Figure 9. Appearance of dilated cystic duct (Cy. D.) three weeks after cholecystectomy in dog.

Figure 10. Dilated cystic duct (Cy. D.) four weeks after cholecystectomy in dog. Note pear-shaped pseudo gall-bladder with narrow neck.

Figure 11. Appearance of cystic duct (Cy. D.) six weeks after cholecystectomy in dog. Note gradual change from first to sixth weeks.

What is the mechanics of surgical drainage? Simply by putting a tube into the gall-bladder or ducts the pressure is lowered and the bile current flows toward the area of lessened resistance. This is exactly the mechanics of the non-surgical duodenal method as heretofore explained.

Boyd(38) has shown in a series of experiments on cholesterol-fed rabbits, the cholesterol in the blood is about 33% less in the cholecystectomized rabbits. He says "the most obvious factor is the absence of the gall-bladder" and concludes "this much condemned organ may serve some useful purpose in the animal economy."

We agree with the surgeons that complicated cholelithiasis, malignant disease, occlusion of the ducts and gangrene of the gall-bladder are purely surgical but in infections of the biliary system with no occlusion we firmly believe the non-surgical method has the same mechanical effect as the surgical and it has the advantage of not subjecting the patient to an operation which often has embarrassing sequelae.

VALUE IN TREATMENT

Favorable results by this method have been reported by Hopkins(24), Pope(25), McClymonds(26), Whipple(13), Friedenwald and Morrison(27), Simon(28), Smithies(29), Niles (30), White(12), Stockton(31), Synott(32), Sachs(11), Lucas(33), Neuhoff(34), Mann and Levin(35), Mayhew and Smith(22), and many others. Bassler(39), one of the critics of this method states the aspiration of infected bile prevents the resorption of the affected material and stimulates the liver cells to secrete a more healthy type of bile.

With an experience of over 3,000 no-surgical drainages we value it very highly as a diagnostic method and as to the treatment of cholecystitis, cholangitis, choledochitis, hepatitis and stasis in the biliary tract, we believe our results will surpass those in a like number of operative cases for the same conditions. One of us (A. L. S.(36)) has shown elsewhere that local therapy should not be instituted until after a complete general examination and then all related pathologic conditions can be eliminated. This method we have rigidly followed in this series of biliary tract infections.

We have a large number of patients who were advised an operation was absolutely necessary and who today are the greatest enthusiasts for this non-operative treatment. These we hope to report in a later paper. Despite the disparagement of this method by many of our surgical brethren, we feel if they should give it a fair trial before and after operations, many of their unfavorable operative sequelae would be prevented. Also if they could be induced to try it in the indicated conditions, many operations would be found unnecessary.

Since Graham(23) has shown a complicating hepatitis is present in all gall-bladder infections, duodenal drainage after necessary operations would do much to overcome this infection.

CONCLUSIONS

1. The gall-bladder is a bile-concentrating reservoir and the hepatic ducts are bile-diluting conducting tubes.

2. The bile current is normally toward the gall-bladder because its pressure is lower than that in the ducts but when the duodenal mucosa and sphincter of Oddi relax the pressure in the common duct is reduced, consequently, the flow of bile is from the gall-bladder and hepatic ducts through the common duct and into the duodenum.

3. Lyon divides the bile recovered through the duodenal tube into "A", "B" and "C" parts. We believe that it can be approximately separated into these three parts.

4. All writers at least agree that magnesium sulphate drains the common and the hepatic ducts.

5. "B" bile is similar to the bile found in the gall-bladder. It is more concentrated than the other two types of bile being about 8 to 1. It has been shown bacteriologically to be similar to gall-bladder bile and also that its increased density and darker color is not due to any part of the instilled magnesium sulphate. Since "B" bile is more concentrated than the others, since gall-bladder bile is more concentrated than the other types and since the gall-bladder is the only concentrating organ in the biliary system, we feel that "B" bile must come from the gall-bladder. From what other source could it come?

6. All hepatic ducts have been shown to enlarge after a cholecystectomy so it is reasonable to believe these take on the reservoir and concentrating function of the gall-bladder.

7. In our opinion, in cases of functionless gall-bladder and in stricture of the cystic duct, recovered "B" bile comes from the ducts which dilate as after a cholecystectomy.

8. "B" bile recovered after "C" bile has appeared is the result of a partially emptied gall-bladder.

9. We believe this method has great value in the diagnosis of infection of any part of the biliary system, stasis in the same parts and occlusion of the cystic duct.

10. In infections and stasis of the patent biliary tract we believe it gives better results than by any known surgical procedure and without the many sequelae following operations.

11. It has exactly the same mechanical foundation as a cholecystostomy and brings about exactly the same results without the pain of operation and the great loss of time connected with it.

12. We believe the medical drainage of the gall-bladder is of no value in recovering stones from this system, in malignancies, in occlusion of any part of the biliary tree nor in gangrene of the gall-bladder.

13. We know it to be of great value in infection and stasis of the whole bile tract. It should be of great value before and after operations in overcoming the complicating hepatitis and duct infections which are always present in infections of the liver drainage system.

14. We accept this method of diagnosis as one cog in the great wheel of general examinations and wish to emphasize the fact that this part of the body should not be treated before the whole has been thoroughly examined and all contributing factors eliminated.

15. We believe the objections to this

method by surgeons who have had no experience with it should not be taken too seriously.

16. We believe this method has great value and that any treatment which tends to lessen the number of operations and make diagnosis more exact should be given a thorough trial by the medical profession before it is condemned.

BIBLIOGRAPHY

1. Meltzer: Am. J. M. Sc. 153:496, 1917.
2. Lyon: J. A. M. A. 73:980, 1919.
   Lyon: J. A. M. A. 74:246, 1920.
   Lyon: N. Y. M. J. 112:23, 1920.
   Lyon: N. Y. M. J. 112:56, 1920.
   Lyon: Am. J. M. Sc. 160:515, 1920.
   Lyon: Med. Clin. N. America, March, 1921.
3. Starling: Physiology, 1920, page 761.
4. Mayo, C. H.: N. Y. Med. J., CIII, p. 433.
5. Rous and McMaster: Proc. Soc. Exp. Biol. and Med., Yale, 1920, XVII, p. 215.
6. Haver, Hargis and Van Meter: Surg., Gynec. and Obst., Mch., 1922, XXXIV, p. 307.
7. McWhorter: Surg., Gynec. and Obst., 32:124, 1921.
8. Einhorn: N. Y. Med. J., Sept. 7, 1921, p. 262.
9. Dunn and Connell: J. A. M. A., Oct. 1, 1921, p. 1093.
10. Bochus: Personal communication.
11. Sachs: Nebr. State Med. Journ., June, 1921, p. 225.
12. White: Boston Med. and Surg. J., Febr. 16, 1922, p. 206.
13. Whipple: Annals of Surgery, 73:556, 1921.
14. Eisendrath and Dunlavy: Surg., Gynec. and Obst., 26:110, 191[illegible]
15. Rous and McMaster: J. Exper. Med., July, 1921, p. 47.
16. Hartman, Smyth and Wood: Ann. Surg., Febr. 1922, p. 203.
17. Judd and Mann: Surg., Gynec. and Obst. 24: 437, 1917.
18. Oddi: Arch. Ital. de Biol. 8:317, 1887.
19. DeVoogt: Nederl. Tydschr. v Geneesk. 43:236, 1898.
20. Haberer and Clairmont: Arch. f. klin. Chir. 73:679, 1904.
21. Johnson: Surg. Gynec. and Obst., Mch. 1922, p. 177.
22. Mayhew and Smith; Med. Herald and Electrotherapist, Aug. 1922.
23. Graham, Peterman, and Priest: Arch. Surg. 2:92, Jan. 1921.
24. Hopkins: Med. Clin. N. Am., Mch. 1920, p. 1463.
25. Pope: Kentucky Med. J., Jan. 1922. p. 2.
26. McClymonds: Kentucky Med. J., Jan. 1922. p. 8.
27. Friedenwald and Morrison: N. Y. Med. J. Sept. 7, 1921. p. 280.
28. Simon: So. Med. J. June, 1921. p. 447.
29. Smithies, Karshner and Olsen: J. A. M. A., Dec. 24, 1921. p. 2036.
30. Niles: So. Med. J. Dec. 1921, p. 961.
31. Stockton: Am. J. Med. Sc. April, 1922. p. 485.
32. Synott: Am. J. Surg. June, 1922, p. 136.
33. Lucas: Ky. Med. J. July, 1921.
34. Neuhoff: J. Mo. Med. Assoc., May. 1921.
35. Mann and Levin: New Orleans M. and S. J., Jan., 1921.
36. Smith, Arthur L.: Nebr. St. Med. J., June, [illegible] p. 179.
37. Doree: Proc. Roy. Soc., London 1908 to 1922.
38. Boyd: British J. Surg., Jan. 1923. p. 337.
39. Bassler: Therapeutic Gazette, Apr. 1923, p. 231.
40. Starling: Quoted by Boyd, British J. Surg., Jan., 1923. p. 337.
41. Bassler, Luckett and Lutz: Am. J. Med. Sc. Nov. 1921, p. 674.

INDICATION AND SURGERY OF CAESAREAN SECTION.*

George P. Shidler, M. D., York, Nebr.

Caesarean section is the removal of the child from the uterus through an abdominal incision. The term probably comes from the latin word cadere, to cut, and has nothing to do with our late lamented friend Julius Caesar. The first Caesarean sections were performed on dead mothers, probably as early as during the Egyptian ascendency. Numa Pompilius, 750 B. C., by royal decree, commanded the removal of the child before the burial of its mother. Caesarean section on the living is a relatively recent procedure.

My old instructor De Lee tells that Felkin witnessed a Caesarean section in 1879 in the heart of Africa (Uganda) performed by a native tribesman. "The operator, a specialist, washed his hands and the operative field with banana wine (antisepsis!) the patient being drunk with the same (anaesthesia!). A quick incision opened the uterus; after cutting the cord and removing the placenta the cervix was dilated from above, the uterus massaged and compressed, the peritoneal cavity cleansed by raising the woman up, then the abdomen closed by a pin and figure of eight suture, the wound being dressed with a paste of crushed herbs. The temperature remained below 101 degrees, and the wound healed in eleven days."

The first authentic Caesarean section was done by Trautmann of Wurtenburg in 1610, in a case of hernia uteri gravidi, although Rousset in 1581 collected fifteen cases of extra-uterine pregnancy which probably were not all extra-uterine and established the operation of Caesarean section in spite of its fearful mortality. It met with great opposition from Europe's best accoucheurs and very slowly came to be accepted as a final resource in the most forlorn cases, where the parturient almost to a certainty would have died without it. The Catholic church came out unequivocally in favor of this operation because of the dictum that the child should have equal chances with the mother.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

Kayer, in 1844, records a mortality of 62 per cent; Spaeth said in 1877 that there had not been a successful case in Vienna; Tarnier said the same thing held in Paris. Harris collected eighty cases in the United States with a mortality of 52%. The causes of death were hemorrhage and infection, sutures could not be put in the uterus because they could not be removed, the result was that utero-abdominal bleeding and escape of lochia into the belly usually set up a peritonitis. In 1877 Porro of Pavia introduced supravaginal amputation of the uterus after the child was delivered, and for a short time this operation bid fair to replace the conservative section. In 1882 Sanger introduced the median incision, transperitoneal operation with silver wire, seromuscular sutures, eight or ten in number, avoiding the decidua; later he added fine seroserous sutures, all under extreme antisepsis.

With the general improvement of our aseptic technic the results of Sanger's operation has become progressively better.

Along with Porro's and Sanger's operations there was developed by certain men, who felt that the classic Caesarean had much to be desired, a technic of extraperitoneal approach. Of these methods, De Lee, in the Journal of the A. M. A. July 12, 1919, considers Latzke's the best. The incision is made either transversely or longitudinally, just above the pubis, the peritoneum is pulled out of the pelvis, the bladder is pushed off the cervix to the right and beneath the vesico-uterine fold, which has been pushed up toward the navel, a bare space of cervix and lower uterine segment is provided, through which the child is delivered.

Thus we see there have been developed three main methods of operative procedure:

1. Transperitoneal, conservative.
2. Porro—or transperitoneal with hysterectomy.
3. Intraperitoneal.

The transperitoneal or conservative method is the one of most general usefulness; the Porro being done in the face of probable infection or absolute desire to prevent further childbirth; while the intraperitoneal method is employed with the idea of preventing infection of the peritoneal cavity. However, in the face of more perfect technic the mortality of the transperitoneal has become less than the mortality of the intraperitoneal operation. For the exact technic of these various operations, I refer you to a late edition of any work on surgical obstetrics such as De Lee's, Williams' or Edgar's; our idea in this paper being rather to present some vital facts and invite a comparison of experiences and opinions in such a manner as to be of some help now or at a future time.

First let us consider the present day status of the Caesarean section. In statistics collected very carefully from the literature and edited so as to be as exact as possible, Williams finds that out of 2,936 cases of intrapelvic operations there was a mortality of 37 (1.2%) and a fetal mortality of 346 (17.2%). The destructive operations present a maternal mortality according to different authors of from 5.1% to 11.5%. In 1907, Reynolds of Boston collected the Caesareans of the preceding ten years and classified them under the headings:

1. Primary (before the onset of labor).
2. Secondary (early in the first stage).
3. Late (after six hours of strong pain) or where the os was dilated more than the size of a dollar. There were eighty-two primary operations with one death (1.2% mortality); a hundred and fifty-eight secondary with six deaths (3.7% mortality); and forty-nine late with six deaths (12.2% mortality).

Williams divides his cases into early and late; early being those operated upon before twelve hours of labor; late cases those after twelve hours of labor. Among 846 cases before twelve hours of labor, he found fourteen maternal deaths, a mortality of 1.6%. These statistics were largely from hospital cases. De Lee by a questionnaire including his own cases, reports 39 extraperitoneal operations with deaths of four mothers and four babies; 117 transperitoneal operations with the death of one mother only, but, he says, there must always be an unavoidable mortality to Caesarean section; it is increased, first with the length of the labor about 1% every two hours; second, with the number of vaginal examinations made, or operations attempted; third, with the rupture of the membranes; fourth, wth the lack of skill of the operator. Furthermore certain women carry infection in the vagina, harmless there but fatal if brought into the peritoneal cavity. There is no way of discovering it beforehand.

Newell (in Journal A. M. A. Febr. 24, 1917) found in the small cities about Boston that unpublished results of Caesarean section were suprisingly bad in regard to maternal mortality. It was reported as from 10-20 up to 60-70%. He says that Caesarean section performed by a competent surgeon on a healthy, uninfected patient under proper conditions is an operation which should be attended by little, if any higher, mortality than is to be expected in ordinary clean abdominal surgery on patients who are considered good surgical risks. If, however, anyone of these conditions be disregarded, the prognosis will be immediately altered for the worse.

We shall then accept that in well selected cases in labor less than 12 hours the maternal mortality should vary from 1.2 to 1.6 and in late cases (after 12 hours) a mortality of 12.2%, progressing upward rapidly with every hour's delay. De Lee has given us the general rule of 1% increase mortality for every two hours in labor. The facts to be taken into consideration in making a decision whether to perform Caesarean section are (first) the condition of the patient as regards the probability of uterine infection and complicating diseases; (second) the possibility of an aseptic operation and proper after care; (third) the skill of the medical attendants to deal with the special problems which the case presents.

Operation in improperly selected cases means the probable death of the mother from peritoneal infection. The operation should be refused to all patients in whom uterine infection can be demonstrated or is even seriously suspected, provided delivery can be accomplished by some other means. When, however, abdominal delivery seems to be the only possible way, the uterus should be delivered and the peritoneal cavity carefully protected before the uterus is opened; and, after the delivery of the child and placenta, a complete hysterectomy should be performed, it being a violation of all surgical procedures to return an infected uterus to the abdomen to act as a source of peritoneal infection.

Vaginal examination is the commonest cause of uterine infection. And repeated examinations, no matter how careful the aseptic treatment, should place the patient in the suspected class. Attempts at delivery by vagina still more increase the risk of a subsequent abdominal delivery. If failure in such a case follows an attempt at high forceps delivery, Caesarean section is contraindicated, and craniotomy or pubiotomy and not section must be the means of delivery.

Let us repeat that the prognosis of Caesarean operation grows less favorable the longer the number of hours of active labor—the exhausted patient being a poor surgical risk. Newell examines all doubtful cases under anesthesia a few days before the probable date of labor, and, if he finds it impossible to engage the head in the pelvis, he performs Caesarean section at the time of election. But he emphasizes the needs of it being performed by an expert surgeon.

What are the indications for Caesarean section?

De Lee divides the indications for conservative Caesarean section into absolute and relative. "Absolute when the parturient canal is narrowed so much that the child, even reduced by mutilating operations cannot be gotten through with safety. Contracted pelvis with a congagata vera of 6 or 6½ cm. or an immense child will give the absolute indications, but the narrowing of the passage may be produced by exostoses, irremovable tumors, stenosis of the cervix or vagina and neoplasms of the uterus and adnexia, prolapsed before the child. When these conditions are discovered early in pregnancy many may be removed before labor or at least abortion may be done. In labor there is no choice. The relative indications, speaking broadly, will exist when the accoucheur decides that the abdominal delivery offers better chances for both mother and child than delivery from below. It is largely subjective."

Williams sees indications for Caesarean section as follows:

1. In marked cases of pelvic contraction and cases of marked disproportion of the head and the pelvic brim, Caesarean section should be done before the onset of labor.
2. All primipara where the head is high at the end of pregnancy, whether or not

there seems to be any disproportion between the head and the brim, and even if the pelvic measurements are normal, should be regarded as possible candidates for Caesarean section until a few hours of labor have demonstrated whether the uterus can drive the head through the brim. (High forceps and version are unjustifiable operations in the primipara at term, being no safer for the mother than early Caesarean section and having a fetal mortality of over 17%, besides the permanent injury to the brain and nervous system).

3. High abnormal presentations in primipara (high breech, high face and transverse) and late primiparity (over the age of 35) are best cared for by Caesarean section, in view of safety of abdominal delivery for both the mother and the baby. Whitehouse in the Lancet, Jan. 31, 1920, under "Indications for Caesarean section," says, "The indications for Caesarean section broadly stated are, first, definite existing obstruction to the passage of the child, either from disproportion between the fetal and the maternal bony parts, malpresentation or neoplasms, etc., second, the need for urgent delivery in the absence of previous dilatation of the birth canal either for the sake of the mother, as in eclampsia; or for the child, as in placenta previa."

In contraction of the pelvis, Whitehouse think that induction is not advisable and that it is better for the mother to risk the 2.9 mortality of uncomplicated Caesarean section, (Routh, Journal Obstetrics and Gynecology, British Empire, 1911, xix, 1) than to subject the fetus to the 13% mortality of induction (Eden, 1908). Uterine hemorrhage, placenta previa, and eclampsia are indications for early Caesarean section, as giving the least risk to both the mother and child. In a case of placenta previa, if the child is alive, and of a viable age, Whitehouse would unhesitatingly resort to Caesarean section in preference to risking the child's life, by bipolar version. In eclampsia, if labor is not in progress and the cervix is not dilated he always resorts to Caesarean section as the most rapid and safest method of immediate evacuation of the uterus.

Shall we agree then, that:

1. Caesarean section in ordinary cases if operated under similar favorable conditions of preparation and technic, is no more dangerous than any other abdominal procedure?

2. That in a primipara, at or near term, with the os tightly closed, in good condition, the child alive, eclampsia and also placenta previa are better treated by Caesarean section provided it be done early?

3. That high forceps and version are unjustifiable operations in primipara at term, being no safer for the mother than early Caesarean section and having a fetal mortality of over 17%, besides permanent injury to the brain and nervous system?

4. That high, abnormal presentations in primipara (high breech, high face and transverse) or in primipara with a history of previous long labor, forceps and a dead child should be considered as candidates for Caesarean section at term?

5. That abdominal delivery is preferable to a hard, or possibly instrumental delivery through natural passages in certain cases where the woman is unfit as regards her nervous constitution and general makeup to stand the strain of labor?

6. That primipara over 35 are best cared for by Caesarean section in view of the safety of abdominal delivery for both mother and the baby?

7. That while Caesarean section is a dangerous procedure unless done well, there is also a great danger to mother and child from careless usage of forceps and general obstetrical technic in cases of dystocia?

In conclusion we wish to present a series of 14 sections, eight of which were in labor calling for immediate action, where time was an all important element, cases where the mortality is necessarily higher than selected hospital cases where the patients have reported regularly for examination and observation and definite plans of procedure often agreed upon before hand.

These cases are interesting because to our mind they clearly demonstrate the truth of the points we have been trying to bring out in this paper.

Case 1.—Mrs. M., age 26, primipara, indication—progressive eclampsia, at term but not in labor, os rigid, operation performed early, one hour after first convulsion; patient had chronic endocarditis, and had one kidney removed four years previously for infection and stones. Result recovery of mother and live healthy child.

Case 2.—Mrs. F., age 24, para 2, indication—general contracted pelvis, no engagement of head after eight hours of labor, history of having lost previous child after forceps and attempted version, at term and in labor, no dilatation larger than half-dollar, operation performed early, perfect recovery of mother; baby alive but with a large meningocele. The baby died four days later.

Case 3.—Mrs. H., age 40, para 4, indications—general contracted pelvis, spinal curvature; history of three dead babies after premature delivery and forceps. Section performed at term before labor began; result, recovery of mother and live child.

Case 4.—Mrs. A., age 27, para 2, indications—ruptured uterus, attempted version and high forceps, mother in labor for 48 hours; dying, operation performed solely with the hopes of saving the child. Uterus ruptured with neck of child buttonholed in tear of uterus. Baby dead.

Case 5.—Mrs. W., age 27, para 2, indications—general contracted pelvis, small congata vera, transverse position, history of previous labor with high forceps, long labor, dead baby; in bed three months following first labor. Caesarean section advised by accoucheur for next baby. Operation performed after eight hours of labor with no engagement of head. Recovery of mother with live child.

Case 6.—Mrs. B., age 28, para 3, indication—placenta previa, patient at term; early operation; recovery of mother and live baby.

Case 7.—Mrs. U., age 27, para 3, time eight months; indications—severe and continual hemorrhage. Vagina packed and attempt made to induce labor; no dilatation, hard cervix. Continued hemorrhage. Patient anemic, pulse rapid, but in fair condition. Treated as an emergency surgical case. Placenta found separated high up. Perfect recovery of mother; child dead.

Case 8.—Mrs. H., age 35, primipara, indication—non-engagement of head; in labor 48 hours; wanted child to have a chance the same as mother; Caesarean section contraindicated on account of long labor although woman in fair physical condition. Mother died six hours after operation. Child hydrocephalic.

Case 9.—Mrs. M., age 24, primipara, indication unusual. Came to hospital for acute appendix; leucocytosis 14,000, history of chronic appendix. Labor began at term after entrance to hospital. Gangrenous appendix removed before rupture. Thought best chance for mother and child to terminate labor at same time. Mother had rather difficult convalescence, but with perfect recovery. Child was a blue baby, living until the next day.

Case 10.—Mrs. S., age 30, para 3, indications—to prevent rupture of uterus. Patient had had suspension performed several years before. Transverse position of baby with no descent after 48 hours. Caesarean section contraindicated after long labor and repeated examinations. Patient apparently in good condition. Operation performed in country home. Began under ether and ended with no anaesthesia, the patient discussing the operation with the surgeons. Baby alive, but died later. Adhesion found shutting off lower uterine segment, the baby lying above transversely. Mother made an uneventful recovery.

Case 11.—Mrs. P., age 25, para 3, indications—transverse presentation; had had a suspension performed since birth of last child. After six hours of labor with no presenting part, section performed. Mother and child alive and well today.

Case 12.—Mrs. B., age 20, primipara, early rupture of bag of waters, no engagement of part after twelve hours of labor; cervix hard with only one finger's dilatation. Section performed. Mother and child alive. Patient had absolutely no unusual postoperative symptoms.

Case 13.—Mrs. C., age 23, primipara, head barely engaged after eighteen hours hard pains, no advance made during last four hours. Cervix relatively little thinned, dilatation about size of half-dollar. Question of high forceps, forcible dilatation of the cervix or a section. Section performed. Live mother and child.

Case 14.—Mrs. W., age 21, para 2, previous history of high forceps and dead baby. Operated upon in 1921 for appendicitis. Operated upon Nov. 1922 for ventral hernia. At this time surgeon reported uterine fibroid and pregnancy; left tube and ovary removed. Patient at term had hard pains for four or five hours for three days, with rupture of membranes and no presenting part. Diagnosis made of transverse presentation. Patient very large and abdominal fat prevented abdominal palpation of child. Section performed. Uterine myomata which might have indicated a Porro operation. Usual sectional technique employed, not removing uterus. Right tube tied off. Mother and child alive and uneventful recovery. Uterus gamma-rayed.

Analysis. Of the fourteen cases, in the ten done early, every mother recovered and is today in good health, and every baby was alive at operation, although one with a meningocele died several days later, and one, being a blue baby, died 24 hours later. Of the four done late, one mother died, one mother was dead at the time of section from ruptured uterus caused by attempted version or high forceps, and two mothers recovered; there were three dead babies, one being outside the uterus in the abdominal cavity.

One case of progressive eclampsia done very early, mother and child alive and well today. One case of placenta previa done early, mother and baby alive today.

YOUR STATE JOURNAL

The journal of your state society is your own publication and the official organ of your own society. As such it deserves your active support. If it is not so good as you think it should be, you can help to make it better. The state journal serves for the publication of scientific papers presented at the meetings of the state association and of county and district medical societies, for recording and commenting on professional and organizational activities, for maintaining contact between component societies and their members throughout the state and for keeping its readers informed about the comings and goings and the fortunes, good or bad, of their fellows in the state; and it serves also as a forum for the discussion of professional problems of the times. —Am. Med. Assn. Bulletin.

INDICATIONS FOR THE ADMINISTRATION OF INSULIN*

John Mills Mayhew, A. M., M. D., F. A. C. P., Lincoln, Nebr.

In 1889 there occurred the classic experiment of Minkowsky and Von Mering which demonstrated that extirpation of the pancreas in animals is followed by symptoms identical with those of diabetes in man. Attempts were then made to modify or cure diabetes by the administration of pancreatic gland or extract of pancreas. (A century before this demonstration a case of human diabetes had been reported in which there were pathological lesions in the pancreas.)

Following the work of Minkowsky and Von Mering, Osler prophesied (1893) that the future treatment of diabetes rested in the discovery of a pancreatic hormone which, when administered, would modify or cure human diabetes.

The next step occurred when Opie proved that lesions were found in the Island of Langerhans in individuals who during life had suffered from diabetes. This was recognized as significant of the fact that there was a relationship between these cells and the metabolism of carbohydrates. In 1919 Joslin predicted that an extract from the Island of Langerhans would eventually be of service in the treatment of diabetes.

Banting assumed the hypothesis that the proteolytic ferment of the acinous cells destroyed the value of the physiological secretion of the Langerhans cells. His problem was to obtain a secretion free from the enzymes of the acinous cells. A series of experimental ligations on dogs followed. He eventually produced an extract of the Island of Langerhans which would reduce the blood sugar in both animal and human diabetics, would lower or cause to disappear the ketonuria and glycosuria and raise the respiratory quotient.

Investigation by the co-workers at Toronto University established the unit of the extract to be the amount required to reduce blood sugar of a 1 kilogram rabbit to 0.04% in 2 hours (or less).

The first use of insulin in human diabetes was in January, 1922. Banting gave this discovery to the world and speaking before the Association of American Physicians at Atlantic City, May 1, 1923, issued the following statement: "Insulin is not a cure for diabetes, it is a treatment. It enables the diabetic to burn sufficient carbohydrate so that proteins and fats may be added to the diet in sufficient quantities to provide energy for the economic burdens of life."

Eli Lilly and Company of Indianapolis was selected to manufacture and distribute insulin (iletin) in the United States. For six months it was furnished free to clinicians selected by the Toronto investigators for the purpose of making accurate clinical and laboratory observations, and of determining its value and limitations. The reports of these observers were collected and, in a large part, were published.[1]

INDICATIONS FOR USE OF INSULIN

The experimental stage has been passed. The use of insulin in connection with diet is established as the rational therapeutic measure in diabetes.

The product is on the open market and will be used by practitioners having diabetics under their care. It is time to consider what class of case demands the use of this powerful physiological aid.

Banting himself leads with the statement that 80% of all diabetics do not need insulin. Other observers place this figure higher. His plan of exclusion is simple. The patient remains for 24 hours on the same diet he had used before coming under observation. He is then placed on a basal requirement diet which is based on a DuBois chart and Aub Du Bois table, food values being calculated by the use of the Woodyatt ratio. The patient remains on this basal requirement diet for a week, the carbohydrate value of which is so low that little or no sugar is passed in the urine. If the urine is sugar free on basal requirement diet, the diet is raised.

If the patient is able to take 500 calories over his basal requirement diet he does not need insulin.

THE WOODYATT RATIO

Woodyatt has prepared a table giving the caloric requirements per hour per square metre of body surface for different ages of males and females.

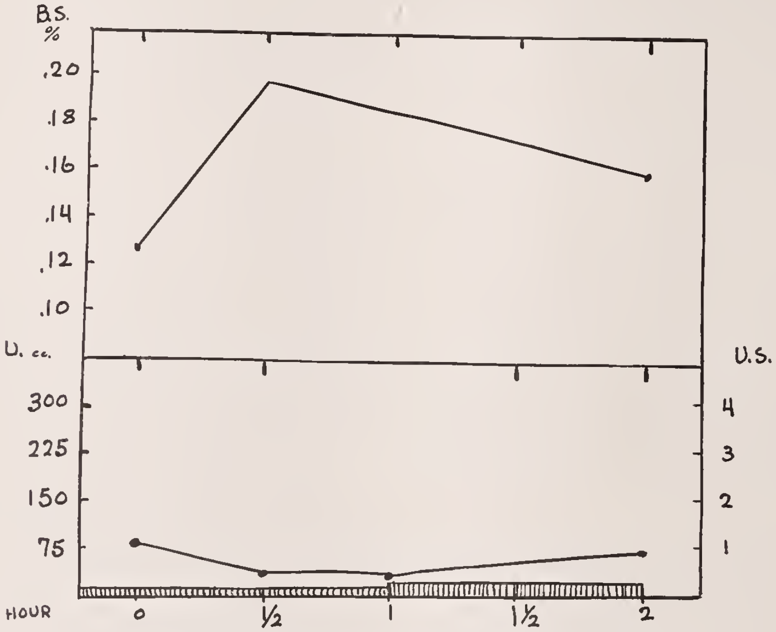
One proceeds as follows:

Find by the Du Bois table the square metres of body surface of a person of given height and weight. Multiply that figure by the number of calories required per hour per square metre according to the Woodyatt table, and multiply by 24, (hours in day). This gives the basal requirement diet or the diet on which a person can live and maintain his body weight. This diet must be a "balanced ration" consisting of protein (P), carbohydrate (C.H.) and fat (F) maintained in the following proportions:

---

*Read before the meeting of the Third Councilor District, Table Rock, Nebraska, Oct. 23, 1923.

[1] Journal Metabolic Research, May, 1923.



Legend: B. S. Blood Sugar. U. cc. Amount of urine passed. U. S. Amount. (percent) sugar in urine, (horizontal shading), after ingestion of 100 gms. glucose on 12 hour fasting stomach.

Chart I. Case of low kidney threshold. Easily handled without insulin. Now tolerates 1000 calories above basal maintenance diet. Treatment: Rest and dietetic management.

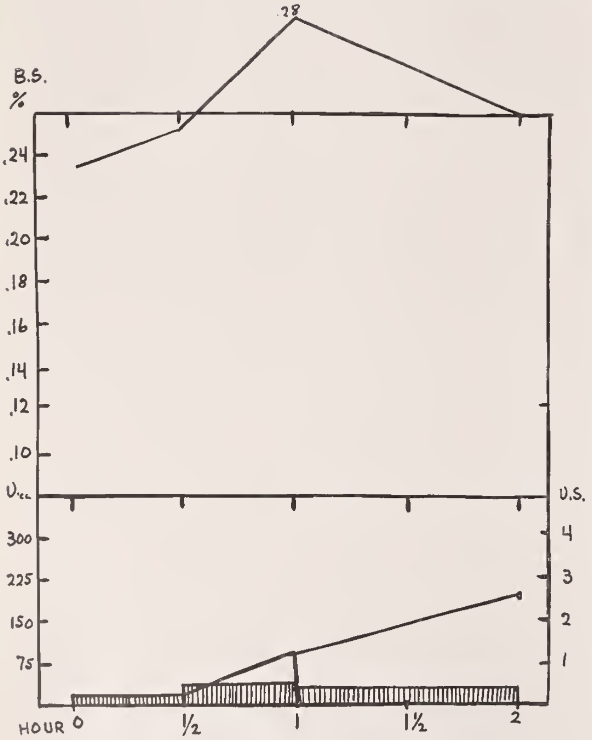


Chart II. Blood sugar high. Absence of polyuria. Insulin, 12 units daily for one week, then dietetic management plus rest.

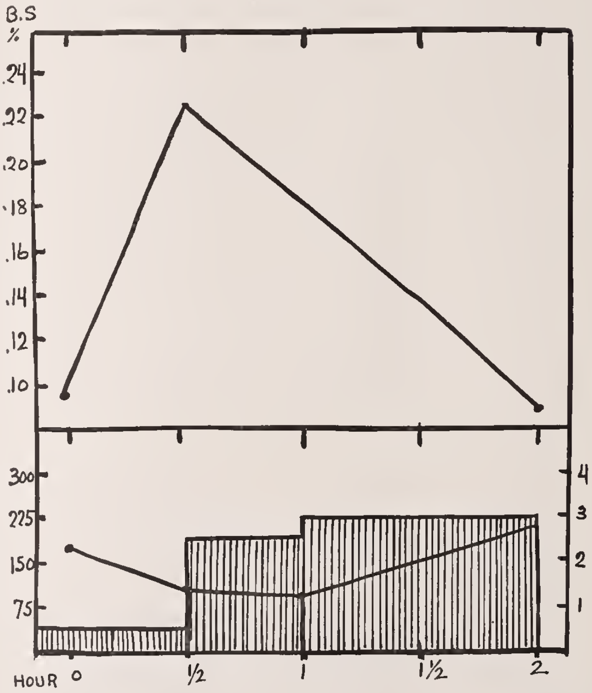


Chart III. High urine sugar, low blood sugar, absence of polyuria. Dietetic management with rest. Now handles 750 calories over basal requirement.

Protein=⅔ body weight.

Fat = Number calories needed for daily metabolism less five times number grams of protein, divided by 10.

Carbohydrate=No. calories required less 10 times number grams protein divided by 30.

The formula: M equals the estimated daily metabolic requirement. Protein (P) equals ⅔ x body weight in kilos[2]. Fats (F) equal $\frac{M-5P}{10}$. Carbohydrates (C.H.) equals $\frac{M-10P}{30}$ (In estimating the basal maintenance diet of diabetic children, add 15-20 per cent to the number of calories and estimate protein at ¾ body weight in kilograms.)

SIMPLIFIED FORMULAE

These are now legion. Dreyer, Wilder, Banting and many others have made valuable modifications. The one which is the most simple and, at the same time, practical, is the method of Petty, working in the Jefferson Hospital Diabetic Clinic, Philadelphia. His plan is as follows:

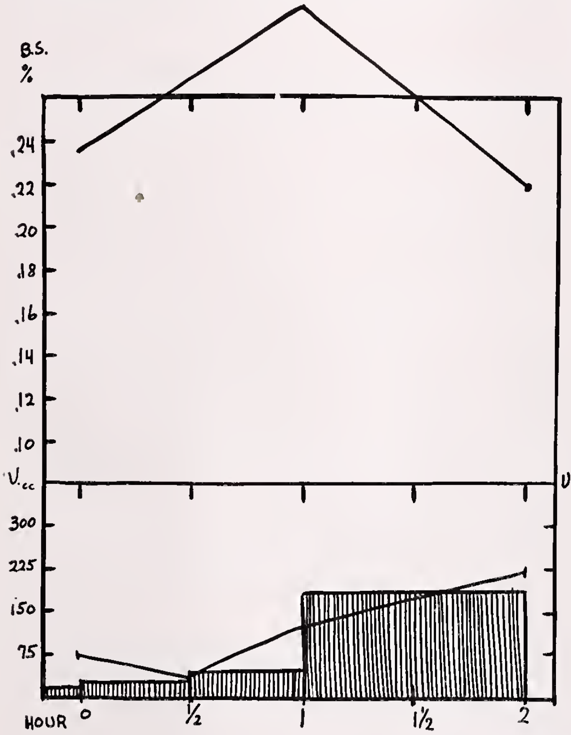


Chart IV. High blood sugar without polyuria. Required high insulin dosage at beginning of treatment. Now takes four units insulin twice daily. Diet 500 calories above basal maintenance requirement.

Find ideal height and weight by the Life Extension table, adding or subtracting 10% when necessary, according to build of patient, heavy or light. Allow 30 calories per kilo (2 lbs.) body weight.

Divide P.F. & C.H. as follows:

1 gm. protein per kilo body weight (increase in children).

1 gm. C.H. to 3 gm. F.

Example: Weight of patient 100 lbs. — 1500 calories needed. 50 gm. P., 42 gm. C. H., 126 gm. F. If the patient can tolerate 500 calories above this basal maintenance diet, he does not need insulin.

This applies to the diabetic one meets in practice who has the courage and moral stamina to make his fight. I recall three patients who have lived happy, useful lives for over twenty years under a rigid carbohydrate regime. The indiscriminate use of insulin, in order to permit carbohydrate "jags", is not to be tolerated.

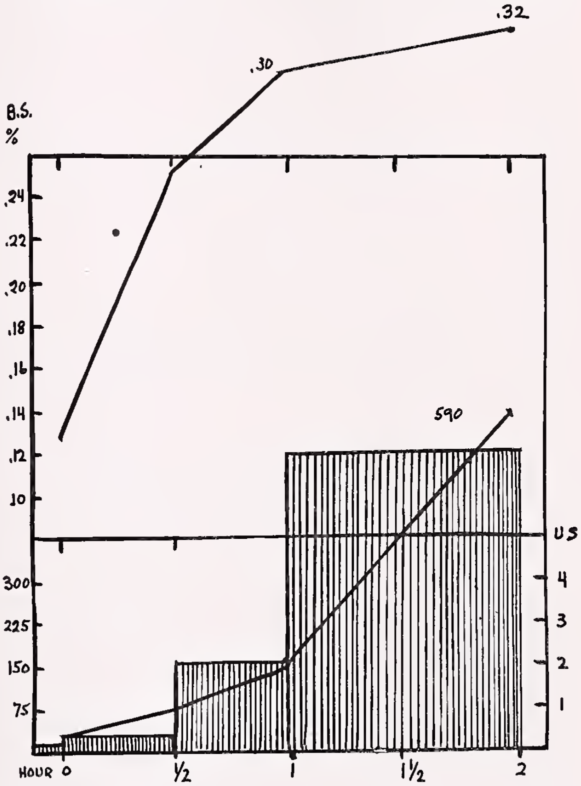


Chart V. Tuberculous case. B. S. and U. S. ascend in unison. Debility plus Emaciation. Polyuria. Insulin, two doses 8 units, controls sufficiently to allow gain 12 lbs. weight in 30 days.

Stengel, speaking before the American Congress on Internal Medicine, April, 1923, placed his limitations for the use of insulin in 4 classes:

(1) Coma cases (must be used early. Large amounts can be given, without waiting for blood sugar estimations or any other form of refinement).

(2) Severe cases with acidosis.

---

[2] A kilo equals 2.2 lbs. (often estimated for convenience at 2 lbs.)

(3) All cases showing great loss of weight or strength.

(4) Cases requiring operations.

To this apparently meager group is to be added "the tuberculous diabetic and those with acute infection".[3]

The widespread use of insulin is fraught with dangers unless (1) the indications are watched carefully and (2) the individual patient is watched carefully. Hypoglycaemic shock is a severe reaction, resembling surgical shock. There may be collapse, convulsion, (especially in children) unconsciousness or death. Every patient taking insulin should be warned of the early symptoms of this reaction, (hunger, weakness, nervousness, sense of impending danger, perspiration.) He should be taught to carry a few lumps of sugar in his pocket and take it at once if he feels the symptoms of "insulin shock."

The condition of hypoglycaemia occurring during sleep is most dangerous. It can be avoided by giving only two doses daily, before morning and noon meals, and omitting both the insulin and carbohydrates at the evening meal.

RESUME

(1) The number of diabetics needing insulin is very small. Each case must be studied individually.

(2) Insulin must not be used to replace dietetic management.

(3) The use of insulin carries with it dangers that must not be overlooked or considered lightly.

(4) Patients using insulin must be taught these dangers and how to meet emergencies when they arise.

---

[3] Harris, "Insulin & Diet in Diabetes", International Clinic, Vol. II, 1923.

THE RELATION OF UPPER RESPIRATORY INFECTION TO CERTAIN CHRONIC DISEASES OF THE CHEST.*

J. C. Thompson, M. D., Lincoln, Nebr.

Within the past two years a number of patients have come to us complaining of a feeling of lassitude and weakness. Their fatigue, in the usual case, comes on early in the day, or they awaken with none of the energy they should expect after a full night's rest. Other symptoms frequently complained of are headache, anorexia, loss of weight, and soreness between the shoulders or about the chest. Occasionally, the patient complains of a chronic cough. Usually an afternoon temperature is found present, and frequently upon examination of the lungs, showers of expiratory rales are heard in the apex or hilus region, often extending to the base. It is with this clinical picture, especially in its relation to chest pathology, that this paper particularly deals.

Whenever crepitant rales are found in the lungs, with an afternoon temperature, and a subjective symptomatology as outlined, our first thought is of tuberculosis. We usually think of tuberculous infection as something concomitant with infancy and early childhood, which remains latent and becomes active usually in early adult life. In a few cases, however, it is probable that childhood infection remains latent, and that active pulmonary tuberculosis arises in later years, secondary to a primary focus in the tonsillar or gingival tissues.

The incidence of tuberculous infection in the tonsil in patients who have died of pulmonary tuberculosis is high. Wood in 1912 found that 69% had tuberculous tonsillar changes. In a series of 1871 tonsillectomies he found that 2.5% of all chronically infected tonsils were tubercular. Reports which do not vary greatly from these have been given by other observers.

In cases of tuberculous cervical adenitis, as we now all believe, the infection is primary in the tonsil or gingival tissues. Matthews, Hurd, Williams and others have shown tuberculosis of the tonsils in from 70 to 85% of all cases of tuberculous cervical adenitis. From the tonsils the disease spreads downward through the cervical lymphatics to the tracheo-bronchial lymph glands or the apical pleura and the lungs. That extension is downward is shown by the fact that in some of the milder cases the process of extension is not complete and the lungs are not involved. It is impossible to say from this evidence that the tonsillar or gingival infection is primary to pulmonary tuberculosis, yet it seems highly probable that such infections are the direct cause at times of active pulmonary lesions.

If a tuberculous infection can extend from upper respiratory foci downward through lymphatic channels to the lungs, it is probable that all pyogenic infection can do the same. The study of such a pathway has been under way for years. Grover in 1905, and other experimenters, showed that dye injected in the pharyngeal wall was carried down the cervical lymphatics to the apical pleura. Experiments of Mullin and Ryder in 1920 as well as those of many others indicate that such a direct lymphatic channel exists. According to Cunningham a lymphatic channel is present between the deep cervical lymphatics and the tracheo-bronchial lymph glands. The question as to whether infection travels from cervical lymphatics to the apical pleura and the lungs, or through the tracheo-bronchial lymphatics to the lungs, as far as the purposes of this paper are concerned is a matter of little consequence.

---

*Read before the Nebraska State Medical Assn., Lincoln, May 15-17, 1923.

The establishment of a possible pathway for infection between upper respiratory foci and the lungs brings up a very important point for consideration. We have been generally taught that secondary infection was frequently the direct cause of a tearing down of restraining walls about tuberculous lesions, thus releasing living organisms from latent foci, and permitting a reactivation of the disease.

We have been advised that the removal of focal infection raises the patient's resistance and thereby aids in the recovery from pulmonary tuberculosis. In my opinion the removal of an upper respiratory infection eliminates a primary cause for the lighting up of latent tuberculosis in the lung by stopping the drainage of secondary infection through lymphatic channels to the latter.

If this opinion is correct it behooves us to make a painstaking examination for such infection, especially in cases such as I have previously described, for they are usually the cases of recurrent activity in fibroid phthisis or the incipient cases of pulmonary tuberculosis. In such patients I believe that such foci should be removed after a short preliminary period of absolute rest. In advanced cases of pulmonary tuberculosis, where secondary infection also plays so important a part, I would consider such treatment inadvisable.

The relation of upper respiratory infection to chronic conditions of the lungs has another important phase I shall now mention. There are a certain number of people who come to us with a subjective symptomatology as previously outlined who do have signs of infiltration in the apices and hilus regions of the lungs, but who do not have active pulmonary tuberculosis.

It is true that upon physical examination resonance may be defective, breath sounds abnormal, and crepitant rales present. But, these are not absolute signs of tuberculosis. Upon X-ray examination scattered, small tubercles are commonly found, but these may be latent and healed. The fuzzy areas which we see in roentgenograms of active pulmonary tuberculosis, may be due in these instances to secondary infection. In short, latent healed tuberculosis may be present and in the same area may be implanted a new pulmonary infiltration, due entirely to upper respiratory infection.

During the war this question was studied extensively over-seas. Since the war Gilbert, Mullin, Webb and others have reported a series of cases in which upper respiratory infection had apparently produced chronic bronchitis, and bronchiectasis which was difficult to distinguish from tuberculosis. Norris and Landis refer to the usual description of the distribution of pulmonary tuberculosis as a generalization which in the usual case is positive but in isolated cases might be misleading.

To present any differentiating points which might help to arrive at the proper conclusion in these cases is difficult. The rales heard in instances due to upper respiratory infection are very apt to be coarser, not so numerous in any given area, and their distribution more widespread than in the usual case of tuberculosis. To clinch our diagnosis, however, we must frequently await the result of treatment. After removal of the focus of infection, the patient gains weight, loses his temperature, and gets well too rapidly to warrant the diagnosis of active pulmonary tuberculosis.

We do not expect active tuberculosis of bones, joints, kidneys, intestinal tract, or skin to become inactive in from 2 to 6 weeks. It is unreasonable to believe that this can happen in the lung.

In conclusion we may summarize as follows:

1. Tubercular infections in the tonsils or gingival tissues are at times primary to active pulmonary tuberculosis.

2. Upper respiratory infection is a direct cause for the lighting up of latent pulmonary tuberculosis.

3. Chronic non-tubercular infections occur in the lungs which are due to upper respiratory infection.

BIBLIOGRAPHY

Wood, G. M.: Penn. Med. Jour., 1912, 15, No. 9.

Matthews, F. S.: Annals of Surgery, 1910, 51.

Hurd, Lee M.: Medical Record, 1909, 75.

Camp, Walter: Results of Tonsillectomy in the Tuberculous. Journal-Lancet, 1922, Vol. 42, n. s. 112.

Mullin, W. V., and Ryder, C. T.: Experimental Lesions of the Lungs, Produced by Inhalation of Fluids from the Nose and Throat. Am. Rev. Tuberc., Nov. 1920, Vol. 4, 683.

Mullin, M. V.: The Lymph Drainage of the Accessory Sinuses. Tr. Amer. Laryng., Rhin., and Otol. Soc., 1919.

Mullin, W. V., and Gilbert, G. B.: Relation of Sinus Disease to Disease of the Chest. Tr. Mid-West Sec. Am. Laryng., Rhin. and Otol. Soc., Febr. 1920.

Webb, G., and Gilbert, G. B.: Bronchiectasis and Bronchitis Associated with Accessory Sinus Disease. J. A. M. A. Mar. 12, 1921, lxxvi, No. 11, 714.

Cunningham: Text Book of Anatomy. 1913, p. 1012.

Norris and Landis: Diseases of the Chest and Principles of Physical Diagnosis, 1918, p. 306.

DISCUSSION

H. B. LEMERE, M. D., Omaha: The relationship between the upper respiratory disorders and lung conditions I feel will be recognized more fully as our knowledge of sinus and especially antrum infections becomes more crystalized. My observation has been that antrum infections are much more frequently the source of pulmonary disturbances than are infected tonsils. The work of Mullen and Webb emphasizes the importance of this connection and the relief obtained after treatment of the sinuses. Dr. Thompson's work corroborates this.

I have seen many cases of untreated chronic antrum infections go on later to pneumonia and I feel this relationship is very constant. These sinuses should have been drained as a prophylactic measure, but as they often do not produce any apparent local or constitutional disturbance it is only through the recognition of the principles in Dr. Thompson's paper that the general practitioner and internist will advise such preventive measure. Such advice given and acted on in time, would often be life saving in preventing pneumonia.

Asthmatic conditions are closely connected with sinus infections. Particularly is this so in children in whom the antrum is well developed early. I had the honor of presenting a paper last year before this society on this subject. I am pleased to state that further experience in the treatment of sinus condition in children, which I then outlined, has been very gratifying. My impression is, that except in tubercular infection, the sinus is always the primary and the lung the secondary infection.

J. C. THOMPSON, M. D., closing discussion: In writing this paper my purpose was to bring out one or two particular points. One was that in examining a chest patient with subjective and objective symptoms, as outlined in the beginning of the paper, we are too much inclined to make a diagnosis of pulmonary tuberculosis and let it go at that. I think that we should make a careful examination not only of the chest, but a routine examination of the head. The latter should include an X-ray examination of the sinuses as well as an examination by a good nose and throat man.

In cases of incipient tuberculosis it is my opinion that a good many of them are checked by taking care of upper respiratory infections.

The doctor's remarks in regard to focal infection and its relation to asthma have been well worked out by Shambaugh. Infections of the antrums especially have a great deal to do with that trouble. There is some question, however, as to whether bacterial infection causes asthma directly. It may be that such an infection has something to do with producing a sensitiveness to various other things. At least treatment of asthma by bacterial vaccines has not been very successful and we are left to wonder whether removal of pus from an antrum has a direct or indirect bearing on the cure of our asthma patients.

The doctor was in doubt as to whether I included sinus infections in this discussion. In my personal experience, most of the cases, where rapid recoveries have occurred from chest pathology resembling tuberculosis, have been antrum cases. I know of a patient examined 5 years ago and diagnosed chronic fibroid tuberculosis who was sent to Colorado and had the diagnosis confirmed. He has gone on with a chronic cough until recently when a double chronic maxillary sinus infection was opened and drained. The patient has lost his cough and gained weight rapidly.

Several similar experiences in which rapid recoveries have occurred lead me to the conclusion that there are certain cases resembling tuberculosis very closely in their clinical aspects which are due to upper respiratory infection.

ACUTE EMPYEMA.*

Herbert H. Davis, M. D., Omaha, Nebr.

Although one of the oldest diagnosticable diseases and recognized by Hippocrates, thoracic empyema is still a problem in treatment and many different views are expressed. The questions are constantly heard: When shall we operate? Should the open or closed method of drainage be used? Or, how can we prevent a case from becoming chronic with its persisting sinus and chronic invalidism? The problem in these cases is first, to save life, and secondly, to prevent chronic disability.

In this paper I shall not include tuberculous empyema as this is a problem of itself.

---

*Read before Republican Valley and Tenth Councilor District Society meeting, McCook, Nebr., May 31, 1923.

ETIOLOGY.

The organisms most often responsible for non-tuberculous empyema are the pneumococcus and the streptococcus, the proportion being about two of the former to one of the latter. The remaining are usually staphylococcus or mixed infections.

It usually follows pneumonia, either a primary or secondary pneumonia following influenza, measles, bronchitis, etc. Occasionally empyema may be primary in the pleura or, rarely, from penetrating wounds.

All ages are affected but it is most often in infants, children, and young adults. The average age of incidence is about 20 years.

It has been said that Southerners are more prone than Northerners, and rural more than city people but as yet these are uncertain points.

Males are affected about twice as often as females. No satisfactory explanation has been given for this.

Moschowitz believes that practically all empyemata are secondary to small subpleural lung abscesses which rupture into the pleural cavity. He objects to the old idea that the pleura is infected by contiguity from the inflamed lung by comparing it to peritonitis secondary to appendicitis. In this there is no peritonitis unless there is perforation, or the walls are so necrosed as to permit an easy transmission of bacteria into the peritoneal cavity. This is true also of all the hollow viscera of the abdomen. Why, he says, should one serous membrane be infected differently from another. The infection by contiguity pre-supposes a direction of the lymph current opposed to that demonstrated and accepted. To overcome this objection those favoring this theory assume a double set of lymphatics one passing from the hilum to the pleura, and the other in the reverse direction.

Moreover, in favor of the idea of the subpleural abscess rupturing into the pleura is the fact that in three dozen cases studied at autopsy at Camp Lee by Dunham of the Empyema Commission, all showed the presence of these abscesses. This has been borne out at some of the other camps.

Clinically this theory is supported by the fact that when empyema cavities are irrigated with an irritating solution, such as Dakin's solution, it so often causes coughing and choking, showing that there is a communication with a bronchus. This communication is often demonstrable by X-ray after injecting with bismuth. Moschowitz believes that these communications exist in every empyema; if small they heal promptly and if large they complicate the treatment.

DIAGNOSIS.

First of importance is the history, complicating or following pneumonia as a rule. Then the physical examination with the typical signs. An X-ray now will check up the physical examination and show the location of the empyema. This is taken with the patient preferably in an upright position or, if too sick, lying on the healthy side.

Every case should be aspirated to show the presence and nature of the fluid, whether it be serous, seropurulent, or purulent; and it shows the location so that the incision can be made at the proper place. By making a smear and culture we find out the organism. If tuberculous empyema, no operation should be done as such operations are the cause of many cases of chronic empyemata.

STAGES.

As a guide to the treatment, empyema may be divided into the following stages:

I. Acute empyema.
   (a) Formative—thin fluid.
   (b) Purulent.
II. Chronic empyema.

The problem of chronic empyema will not be discussed as this paper is devoted to acute and has the purpose of trying to devise methods to cure the acute so that chronic empyema will not develop.

Formative Stage. In the pneumococcus type we do not often find this stage as when first aspirated we usually get thick pus. Therefore, the treatment is usually that which will be given under the purulent stage.

However, in streptococcus cases when first aspirated, the fluid is usually thin and serofibrinous. The fluid usually comes on early in the disease and forms much more rapidly than with the pneumococcus. It is usually two to three weeks before it becomes frankly purulent.

When we see these cases they are usually still suffering from a very active respiratory disease. Except in children the grave danger at this time is not so much from the pleural exudate as from the pulmonary infection. These cases are very ill with high temperature, tachycardia, extreme dyspnoea and cyanosis and are in no condition whatsoever to stand even a very slight operation.

The fluid is not walled off but occupies the general pleural cavity and if there is much fluid the mechanical effect may be serious, due to the following:

(a) Compression of affected lung.

By some this is considered beneficial to the pulmonary disease. However, there is usually extreme dyspnoea and cyanosis and any further collapse will give insufficient aeration.

(b) Pressure on mediastinum and compression of healthy lung.

(c) Pressure on heart and consequent kinking of the great vessels. Therefore, left sided effusion is borne less well than on the right.

The mechanical effects are more important than the toxic. The extreme illness is due to the primary pulmonary disease and to a much less extent to the toxic absorption from the fluid.

An operation at this stage is contraindicated for the following reasons:
It is likely to cause:

(1.) Collapse of lungs.
(2.) Mediastinal flapping.
(3.) Shock.
(4.) Septicaemia.
(5.) Overwhelming toxemia.
(6.) If patient lives may cause fixation of lungs in collapse.

As stated above there are no adhesions yet formed so air admitted will cause collapse of the lungs. Graham and Bell have proved experimentally that the normal mediastinum is pushed over by a pressure equivalent to that of a column of water one centimeter high. They thus prove that not only one lung is collapsed but the other one as well. By X-ray this has been checked up as the mediastinum and heart are seen much pushed over to the opposite side.

Mediastinal flapping may cause death.

The patient is still suffering from the severe pulmonitis and the slightest shock may prove fatal.

There have been a few cases reported in which septicaemia seems to have been produced by operation. In two cases studied by the Empyema Commission, blood culture at the time of operation was negative while 24 hours later it was positive.

An overwhelming toxemia may be produced due to rapid post-operative absorption of this fluid before the resistance is adequately increased by antibodies.

With collapse of the lungs and pushing over of the mediastinum a very large cavity is produced so that if the patient lives the lungs are bound down by adhesions in this position. This is frequently the cause of persisting large cavities which are a difficult problem to heal.

Aside from the theoretical disadvantages is the important fact that when they stopped operating early in the camps, the mortality was considerably decreased. The Empyema Commission concluded that "immediate rib resection or thoracotomy with drainage is dangerous, meddlesome surgery."

The patient should be tided over this critical period by aspiration repeated as often as necessary to remove the fluid. This usually gives almost immediate relief and avoids the dangers above enumerated. At the same time, force fluids. If the condition is very bad, glucose may be given intravenously; for restlessness, pain, insomnia, or exhaustive cough give morphine. Atropine and steam inhalations may relieve the respiratory distress, and good ventilation is essential but be careful to avoid cold irritating air.

Some authorities use a negative pressure at this stage and, while I do not come out strongly against it, I prefer the treatment by aspiration. With the closed treatment, inserting a tube between the ribs, there is more shock, a greater possibility of setting up a septicaemia or increasing the toxemia, a greater chance of producing a mixed infection, and if the wound should break down about the tube before adhesions have formed there will be an inrush of air and serious acute pneumothorax. A surgeon who uses this treatment is more likely to depend on it for a complete cure. This will seldom result due to inadequate drainage, clogging of the tube with fibrin, pus, etc., and so, if this treatment is used, in most cases it should be supplemented later by the open method providing adequate drainage. It is more satisfactory in children than in adults and in them is often curative.

Purulent Stage. As soon as thick pus is obtained the problem of treatment is entirely different. Now the empyema has become walled off by firm adhesions and the mediastinum is fixed. It is now an abscess with no danger of collapse of the lung. Adequate drainage is now the fundamental factor and should be done at once if the patient's condition is good. If too much delay before operating there is danger of such firm adhesions over the pleura that it is practically impossible to expand the lung. The pleural exudate is quite tough and unyielding within ten days.

Should we resect a rib or do an intercostal thoracotomy? This is really not of prime importance just as long as the opening is adequate and properly placed. Negative pressure now has no advantage and should not be used except possibly in children, as it does not leave an adequate opening.

Personally I prefer what Lilienthal has designated as a "major intercostal thoracotomy" unless the ribs are very close together. This consists of an incision four or five inches long usually in the eighth interspace posterior to the posterior axillary line. The incision goes through the intercostal muscles and pleura. Many say an intercostal incision will not give a large enough opening, but these, I believe, have not tried this type of incision. Through this, the cavity can be explored with the hand. At least four large tubes are left in, extending about 2 cm. inside of the pleural cavity. Iodoform gauze is packed about them subcutaneously and no sutures at all are used.

Rib resection is slightly more deforming, there is more possibility of getting an infection of the rib ends causing a chronic discharge of pus into the cavity, and if the periosteum is not removed, occasionally bone forms about the tube and compresses it.

Within a few days the Carrel-Dakin treatment is begun. All details must be carefully carried out or the results will be unsatisfactory. The anterior one or two tubes are removed and five or six Carrel tubes inserted in their place leaving the large posterior tubes in place for drainage. All the tubes are removed daily and sterile ones inserted. Under this treatment the purulent nature of the discharge should disappear in three to five days. Bacterial counts and cultures are done twice weekly until practically sterile and then daily. After several consecutive days show it sterile, continue the Dakin solution for a week to ten days, and then, if it remains sterile, the solution is discontinued and a sterile dressing applied. The wound then closes itself in a short time. Secondary closure of the wound is not good practice, as even with the best possible care, about thirty per cent will recur and necessitate reopening. Aside from the antiseptic action of the Dakin solution, it is of value in dissolving fibrin masses which tend to keep up infection and also to dissolve the fibrinous thickening of the pleura, thus aiding expansion of the lung and consequent obliteration of the cavity.

These patients are gotten out of bed early and begin respiratory exercises and calisthenics. Nutrition plays an important part. Bell, of the Empyema Commission, states that these patients show a negative nitrogen balance on 1500 calories intake per day. This negative balance is the cause of emaciation and even of many fatalities in chronic cases. Therefore, give a mixed diet of 3,300 to 3,500 calories with milk and raw eggs between meals. This gives a positive balance and a gain in weight.

COMPLICATIONS.

As the cavities are often multilocular the treatment outlined will only cure about 33% of the cases. This means that many will need secondary operations. If in a week or ten days the temperature remains up and the patient is not doing well do not delay doing a secondary operation until the pleura has become too much thickened. There is always an underlying cause which if removed, will result in cure. One of the following is usually at fault:

1. Drainage opening not dependent so pus collects in inferior portion of cavity. With one hand in the cavity the lowest point can be made out and an opening is then made there. The upper opening can then be used for Carrel tubes and the lower for drainage.

2. Contracted drainage opening. Enlarge it by lengthening the incision or resecting a portion of one or more ribs, or it may be dilated by increasing the size of the tubes.

3. Necrotic ribs. Remove sequestra or the necrotic ends of the ribs.

4. Retained foreign bodies, as drainage tubes, gauze sponges, tampons, rubber dam, large loose sequestra, etc. X-ray may show it. Treatment is simply removal of the foreign body.

5. Side pockets and lateral branch sinuses. Occasionally the adhesions form irregularly around the periphery so that pockets are formed which drain through a small opening into the main cavity. Later the pockets contract forming tortuous lateral sinuses. Occasionally, at the outset, adhesions form two separate cavities. At times the smaller cav-

ity ruptures into the larger, but usually it is necessary to enlarge the opening into the main cavity or make a separate opening into the smaller and treat it independently.

6. Bronchopleural fistulae. If the abscess of the lung is small the perforation of the lung closes early, but if large, a communication persists for a time between the cavity and a bronchus. Dakin solution, injected into such a cavity causes coughing and choking. Most of these will close spontaneously and then Dakin solution may be started. It is rarely necessary to close the fistula by operation. A continuous irrigation of the cavity by oxygen, in a boy, aged 7, who had a broncho-pleural fistula for 6 weeks, which is the only case I have tried this on, the cough stopped within 24 hours and the fistula was closed in about ten days. As yet I am not able to give an opinion but intend to do some experimental work on it.

With the treatment above outlined, Lilienthal reports 100 consecutive cases, some of which it was necessary to revise once or twice, but none of which became chronic to necessitate a deforming thoracoplasty.

I wish to cite a case now at the University Hospital in which this treatment was used:

Mr. H. P., University Hospital No. 10829, age 21. March 17, pneumonia developed. Admitted May 1st. with diffuse right sided empyema of 6 weeks duration. He was coughing considerably with considerable thick greenish sputum. Temperature around 101, was emaciated, weak, and had lost 25 to 30 pounds. Aspiration produced thick pus with pneumococcus predominating and some streptococci. May 5, Major intercostal thoracotomy, local anaesthesia 1000 cc. thick pus removed.

Four days later Dakin's solution was begun. In 10 days cavity reduced to 60cc. and 4 days later to 35cc. and only 3 organisms seen on a microscopic slide. In 2 weeks gained 20 pounds and had perfect expansion of lung. The only trouble was some epigastric pain at times, due to irritation of the 8th thoracic nerve.

OTHER TYPES OF EMPYEMA.

So far only the diffuse type has been considered.

It may also be local in any part of the chest depending upon the location of the subpleural abscess causing it. Diagnose by physical signs, X-ray and aspiration and make opening into it at the lowest part.

Occasionally the pus is interlobar. If a general empyema accompanies it, there is no danger of opening as soon as purulent. But if it exists alone an early operation may result in general empyema and collapse of the lungs. By judicious waiting, the pus cavity will increase in size, and when it approaches the surface of the lung, pleural adhesions form and it can be operated with no danger of opening the general pleural cavity. It is best to do a costectomy to expose a large surface of the lung and visualize the interlobar fissue.

A bilateral empyema is not so dangerous as formerly thought. Treat each side under the principles of general empyema. It is best to operate the two sides on different days, unless urgency demands opening both at the same sitting.

Let us be on the alert to diagnose empyema early and not to delay treatment when it is indicated. Occasionally, in spite of every care, a case will become chronic, but these should be rare.

CONCLUSION.

The principles in the treatment of acute empyema are:

1. Diagnose early.
2. Aspirate to determine organism and character of fluid.
3. Aspiration repeated as often as necessary in formative stage.
4. As soon as fluid becomes frankly purulent establish adequate drainage by open operation.
5. Sterilization by Carrel-Dakin method.
6. Maintain nutrition.
7. Pulmonary exercises and calisthenics.
8. Look for complications and correct them early.

BIBLIOGRAPHY.

1. Moschowitz, A. V.: Newer Conceptions of the Pathogenesis and Treatment of Empyema: Amer. Jour. Med. Sc. 1920 Vol. 159, p. 669.

2. Wilensky, A. O.: The Present Status of Empyema: Amer. Jour. Med. Sc. 1920 Vol. 160, p. 384.

3. Empyema Commission: Cases of Empyema at Camp Lee: Amer. Jour. Med. Assn. 1918; LXXI, 366 & 443.

4. Graham, E. A.: Some Principles Involved in the Treatment of Empyema. Surg. Gyn. & Obstet., 1920, XXXI 60.

5. Moschowitz, A. V.: The Surgical Treatment of Empyema. Surg., Gyn. & Obstet., 1919, XXVIII, 337.

6. Lilienthal, Howard, Mechanical Factors in the Treatment of Recent Empyemas. Ann. Surg. 1920, LXXII, 393.

7. Lilienthal, Howard: Empyema—a Syllabus of Operative Treatment. Ann. Surg. 1920, LXXII, 87.

8. Lilienthal, Howard: Empyema of the Thorax. Ann. Surg. 1917, LXVI, 290.

9. Lilienthal, Howard: The Surgical Treatment of Empyema of the Thorax: Mil. Surg. 1919, XLIV, 582.

10. Beck, E. G.: The Empyema Problem. Surg. Gyn. & Obstet. 1919, XXVIII, 379.

11. Stewart, G. A.: Treatment of Empyema by the Carrel-Dakin Method at the War Demonstration Hospital, The Rockefeller Institute for Medical Research. Med. Rec. 1918, XCIV, 236.

12. Wilensky, A. O.: The Value of Dakin's Solution in the Treatment of Thoracic Empyema. Ann. Surg. 1921, LXXIV, 79.

13. Mozingo, A. E.: Surgical Treatment of Empyema by a Closed Method. Jour. Amer. Med. Assn. 1918, LXXI, 2062.

14. Peck, C. H. & Cave, H. W.: Acute Suppurative Pleurisy. Surg., Gyn. & Obstet. 1923, XXXVI, 357.

15. Holt, L. E.: The Siphon Treatment of Empyema in Infants and Young Children Compared with Other Measures. Am. Med. 1913, XIX, 381.

16. Eggers, Carl: Empyema., Surg., Gyn. & Obstet. 1919, XXVIII, 348.

17. Graham & Bell. Amer. Jour. Med. Sc., 1918, CLVI, 839.

18. Ashhurst, A. P.: Observations on Empyema. Ann. Surg., 1920, LXXII, 12.

19. McCrae, Thos.: Early Treatment of Empyema by Aspiration; Med. Cl. N. Amer., 1923, VI, 845.

INTRA-OCULAR SARCOMA.*

E. C. Foote, M. D., Hastings, Nebr.

This subject suggested itself to me some time since while treating one of these unfortunates, and the thought occurred that possibly a short review at this time might be not only of interest, but possibly the means of saving a life in the future.

While sarcoma of the eye ball is comparatively rare, it is by no means infrequent. We usually think of the neoplasm as of two main types, melano-sarcoma, and leuko-sarcoma, the later occurring in about one case in ten, according to Rockliff. For the purpose of description, and because my experience has been mainly with this type, I shall confine myself to the consideration of the melano-sarcoma.

This type of malignant growth occurs most frequently between the ages of fifty and sixty. DeSchweinitz says it occurs more frequently in men than in women, and that the left eye is more often affected. He gives no reason for this statement. However, it tallies with the limited number of cases I have seen. These tumors are pigmented, and consist either of round or spindle cells, or, are made up of a mixture of both. They usually originate in the uveal tract, which accounts for their pigmentation, and are usually primary. Those of the choroid are almost invariably so. Fuchs, I believe, confirms this statement.

The tumor originates in the outer layer of the choroid, and usually maintains a spheroidal form up to the time it ruptures. It grows inward, causing, sooner or later, a detachment of the retina.

DeSchweinitz divides the history of a sarcoma into four periods. First, the quiet period; second, the inflammatory period; third, the extra-ocular period, or that stage when the growth breaks through the sclera; and fourth, the metastatic period.

In the first stage, the ophthalmoscopic picture is one closely resembling a detachment of the retina. This membrane is pushed forward by the advancing growth, the whole mass being surrounded by a serous effusion. In some of these cases, it may be possible to recognize the dark choroidal mass beneath. In cases where the tumor is far forward and of some considerable size, it is possible to see it through a dilated pupil by means of oblique illumination. The vision of the affected eye depends upon the location of the tumor, and the field shows a corresponding defect.

During the primary stage, the intra-ocular tension is often normal, but when the sarcoma enters upon its second, or inflammatory stage, the eye externally presents the appearance of inflammatory glaucoma and the tension begins to increase. There is injection of the eye ball, the cornea is clouded, the anterior chamber becomes shallow, the iris loses its lustre, the pupil is sluggish, dilated and immobile. The patient suffers little or no pain until the beginning of the inflammatory stage; in fact, one of my cases had her attention called to her trouble by this symptom. If the patient is not seen until this time, and no other reliable history can be elicited, it is practically impossible to make a correct diagnosis, as the symptom complex corresponds almost exactly with that of inflammatory glaucoma.

---

*Read before Republican Valley and Tenth Councilor District Medical Society meeting, McCook, Nebr., May 31, 1923.

The increase of tension in these cases does not arise from the fact that the tumor occupies a certain space, for this needed room is compensated for by a corresponding decrease of the vitreous. On the other hand, the increase of tension is accounted for by the congestion which the tumor produces in the veins of the choroid, which causes increased transudation of fluid into the interior of the eye (Fuchs). The existence of a sarcoma may be suspected if the patient states that the eye was already entirely blind before the attack of glaucoma sets in, for in cases of primary glaucoma, blindness does not precede the attack, but follows it.

As the growth continues, the sclera gives way to the continued pressure and involvement of the surrounding tissues begins. Metastasis usually follows rapidly and distant organs are attacked. Of these, the liver is the most frequently involved, although the spleen, intestines, and lungs are not exempt. It is by no means necessary for the metastatic stage to wait for the rupture of the sclera. I have seen cases in my own practice, in which this occurred even before the inflammatory stage was reached.

The differential diagnosis is sometimes difficult. Sarcoma of the choroid is differentiated from glioma of the retina by the fact that the former usually occurs later in life and early ophthalmoscopic examination shows retinal glioma to really involve the retina, while in sarcoma, it is merely a covering of the tumor. Gliomas are never pigmented, while in the majority of sarcoma, they are. Knapp and Friedenwald call attention to choroidal detachment, sub-retinal hemorrhage, the acute retinal detachment, as causes for mistaken diagnosis. In choroidal detachment, there would be unmistakable signs of choroiditis, as seen by the ophthalmoscope, and by the same means, the undulating folds of a retinal detachment are usually discernible. Also, the field is usually less sharply defective than in sarcomata.

Too much reliance can not be placed upon the tension in making a differential diagnosis between sarcoma and retinal detachment because, in each case, it may be normal; yet, it has been shown that it is often diminished in retinal detachment, and probably never is in sarcoma of the choroid. However, it is sometimes lowered in sarcoma of the body. (DeSchweinitz.)

In giving the prognosis in these cases, I will quote Hirschberg's statistics, in which he says: "Local recurrence 2.5%. Metastasis 41.5%. Cure 56%." He further states that statistics show a steady improvement in so far as permanent recovery after enucleation for sarcoma of the choroid is concerned, and that his own earlier operations gave only 35% of recoveries.

Metastasis to internal organs is the most usual cause of death, and usually occurs within two years after operation. Of course, the operation should be done at the earliest possible moment, although this does not certainly prevent metastasis.

The treatment is, of course, prompt enucleation, severing the optic nerve as far back as possible. In case of rupture of the sclera, evisceration of the orbit is indicated, although at this stage, there is usually metastasis.

A. O. Pfingst reports, in the Arch. Oph., 50; 431-439, Sept., 1921, the very interesting observation of the occurrence of melano-sarcoma in two brothers, ages 44 and 47, both having the left eye involved, and both being operated upon within two months of each other.

The case reports are followed by discussion of the etiology of the growth of tumors. "The incidence of heredity in the development of neoplasms, especially as regards the development of malignant growths, has perhaps received more discussion than any other phase of the subject. Although evidence is accumulating in recent years based on experimental study with mice and other lower animals by Dr. Maud Slye, and others, indicating that malignant growths can be transmitted by transplantation of tumor cells in animals and that several generations following the occurrence of the disease in an animal are prone to develop a like condition, yet we have no corroborative evidence in the human, in which all inoculation efforts have failed. The frequent appearance of similar growths, especially of a malignant type in different generations of a family, would make it appear to the casual observer that there frequently is a family predisposition to tumor formation, yet statistical proof to warrant this belief is wanting, and it is now pretty generally conceded that heredity does not play a notable part in tumor development." He then concludes, "Whether the occurrences of two identical growths springing from the same structure in the eye, developing in brothers at about the same time of life, will prove to be of future value in determining the etiology of eye tumors is problematical. For the present, it would seem that heredity played no part in their development, and that their occurrence must be looked upon as one of those rare coincidences that are at times encountered in the practice of medicine."

During eight months work in Fuchs and Dimmers clinics, in Vienna, I saw several cases, and remember of following one to autopsy.

Being stationed for a month at Nantes, France, April 1919, awaiting embarkation orders, I spent as much time as possible at the large university hospital, and while there, among many other interesting cases, saw one of these, through the courtesy of the staff. The enucleation was done at that time but, on account of leaving, I was unable to follow the case.

In my own practice, I have had several of these cases, the report of four of which are here given:

Case No. 1. W. S. Male, age 18. Family history negative. Personal history—measles, mumps, and chicken pox; no history of trauma. Systolic blood pressure, 129. Urinalysis, negative. Radiographs of the sinuses and teeth, negative. Nasopharynx, negative.

Present illness: Some three or four months before had complained to parents that he could not see well with left eye, but nothing was done until eye became red and pain severe. Patient was then brought to my office. The eye had the appearance of a hemorrhagic glaucoma; pupil dilated, no reaction; cornea hazy; iris lustreless; anterior chamber almost obliterated; eye blind; no retinal reflex; ophthalmoscopic examination impossible; tension 45 Schiotz.

With this very marked picture confronting me, I advised enucleation, not feeling quite certain, at that time, whether the case was one of malignancy or not. This happened some ten years ago, and the people having relatives in Chicago, decided to seek advice there. They wasted considerable time before going, and when they finally secured the advice of an eminent ophthalmologist, considerable time had been lost. The eye was enucleated, and found to have ruptured. The pathological report was melanosarcoma. In three months, the growth had recurred. It was removed a second time, and returned more rapidly than before. It next involved the brain, and ended fatally some six months after they had first consulted me.

Case No. 2. Male, age 57. This case is of especial interest because it was overlooked early in its course, and one naturally wonders what would have been the outcome, had it been recognized. I regret that I can not give you a more complete history prior to the time I first saw him, as it was not a referred case.

The patient, a man of fifty-seven years of age, called in June, 1920, to consult me relative to impaired vision, and pain in his left eye. At that time, I was in the clinics in N. Y. and on account of my not returning until August, he consulted someone else, who fitted him with glasses. His condition did not improve; in fact, gradually grew worse, and the latter part of September, he wrote me for an appointment.

Patient gave history of having noticed vision in left eye failing for nearly a year.

He appeared well nourished. Blood pressure, systolic, was 150; diastolic 90. Urinalysis proved negative. Wassermann's reaction proved negative. In fact, he complained only of mild pain and diminishing vision in the left eye.

Examination:
Muscles normal.
O. D. 20/50 plus 1 sphere=20/20
Vision:
O. S. 20/100 plus 1 sphere=20/30
Add R. and L. plus 2.50 sphere=Jaeger .75.
Intra ocular tension and field limits, right, normal.

Intra ocular tension, left, normal; field, normal nasally, but showing a very large scotoma corresponding to a lesion, involving the entire temporal side of the retina, extending close to the macula, but not involving it.

Visual media, right, normal.

Visual media, left, showed fine granular floating bodies in the vitreous.

Fundus examination: Right disc of normal color with easily traceable outline, a small temporal choroidal ring showing; mild physiological cupping. Vessels of the ophthalmic tree emerged normally from the disc. Retinal arteries were of normal caliber, and gave normal reflexes. There was no abnormal tortuosity of the smaller arteries. Veins were normal. Macula easily discernible and normal. Left disc of normal color with margin easily traceable, except temporally, where it was slightly blurred. Physiological cupping as in the right. Vessels of the ophthalmic tree emerged normally from the disc. The arteries were of practically normal caliber and gave normal reflexes nasally, above and below the disc. Temporally, they appeared broken off about one cm. from the disc, then reappeared as in a retinal detachment. This apparent detachment was the size of a small hazel nut, and through the retina was faintly seen the pigmented coat of the choroid.

It did not seem necessary to make the usual radiographs in this case, but trans-illumination of the sinuses was negative, as was also the otolaryngologic examination.

Tension: Right, 30; left, 34. Pupillary reaction was normal in the right, and only slightly sluggish in the left.

Immediate enucleation was advised and done the following morning under local anaesthesia. The tumor lay in the upper, nasal quadrant, was slightly nodular, ovoil in shape, and 15 mm. by 2 cm. in size. The laboratory report follows: Large round and ovoid cell with large nucleus, either round or oval. Dark yellow to dark brownish yellow pigment in cells and outside of cells. Pigment very abundant in some areas, almost absent in others. Many new blood vessels throughout section. Cell arrangement generally without "system" but occasionally this approaches the formation of columns or even alveoli, but it cannot be said that there are distinct alveoli. There is no tendency to cyst formation. Stroma is fine and scant. Tumor, itself, very soft, even after alcohol treatment. Diagnosis: Melanotic Sarcoma.

Patient left hospital the third day. Artificial eye was fitted three weeks later. He gained a few pounds in weight, but at the end of three months, began losing, and complaining of pain in the right upper quadrant of the abdomen. Examination showed the liver border extending well below the costal margin. It was somewhat irregular and nodular. I saw him a few weeks later. He had lost greatly in weight, was very weak, and emaciated, due to his inability to take and retain nutrition. He was cachectic and jaundiced. He died six months after his eye was enucleated, no doubt from metastasis to the liver, although we were unable to secure a post mortem. This case emphasizes the fact that metastases does take place, even when the tumor growth has not broken through the sclera.

Case No. 3. Female, age 43, housewife. Gave a negative family history in so far as malignancy was concerned. Had had usual children's diseases, but no serious illness or trauma. For the past six months, had noticed a gradual diminution of vision in right eye, some two months past had been unable to discern light with right eye. About that time, she began having some pain which increased to the point where she sought relief. She had several children, one of which was only six months old, and all were healthy. Her general condition was good and she was well nourished. Her left eye was normal. Vision 20/20, and fields normal.

Examination revealed an eye having the outward appearance of hemorrhagic glaucoma. The tension was markedly increased, the anterior chamber was shallow, pupil dilated and giving no reaction to light or accommodation. The interior of the eye was not recognizable. There was a very noticeable exophthalmos with the resulting widened palpebral slit.

Based upon the increased tension, increasing pain, blindness and exophthalmos, and fearing an extension of the trouble into the orbit, an operation was advised. The eye was enucleated, and on finding the sclera ruptured and involvement beginning in the post-ocular tissue, a complete evisceration of the orbit was done. The eye was then bisected antero-posteriorly. There was complete detachment of the retina, and a large brownish tumor mass, irregular in outline, and occupying the entire temporal side and extending through the rupture. I can account for the increased tension after the rupture of the sclera only from the fact that the tumor growth seemed to be completely blocking the aperture.

The laboratory report in this case has been lost, although I distinctly remember that it was one of melano-sarcoma.

It would seem that extensive metastasis would occur in this case, but contrary to my expectation, there had been no recurrence or metastasis some four years after the operation. Since that time, I have not seen the patient, but believe she is still alive.

Case No. 4. Male, aged 48, physician first seen April, 1920. For past two months had noticed temporal visual field of left eye gradually diminishing, until, when he consulted me, 90 degrees were gone entirely, and there was a gradual shading on both edges. He came for refraction and advice, not suspecting the possibility of malignancy. While not particularly robust, he is a man of exemplary habits and has had no cause to worry about his health, prior to this time.

Examination:
Muscle balance normal.
O. D. 20/40 plus 1.00 axis 90=20/20
Vision:
O. S. 20/40 plus 1.00 axis 90=20/30
Add plus 1.75 R. and L. Jaeger .37

Intra-ocular tension normal and fields as above in right eye; media also clear.

Intra-ocular tension normal and fields as above stated in left. Visual media clear, except for a few, fine, granular floating bodies in the vitreous. Fundus examination: Right disc normal, left disc normal in color, with easily traceable margin, except on the nasal side where it was less distinct. There was a normal physiological cupping. Vessels of the ophthalmic tree emerged normally from the disc. Retinal vessels showed normal reflexes and were of normal caliber superiorly, inferiorly and temporally. Nasally, they were hazy, showed the broken appearance of a retinal detachment, and gave irregular ophthalmoscopic refraction. Nasally, covering an area of 1½ by 1 cm. was an ovoid protrusion of the retina, extending about 5 mm. into the vitreous. Its anterior margin was just posterior to the ciliary body. Careful ophthalmoscopic examination revealed a dark color reflex showing through the retina.

The patient had a systolic blood pressure of 145. Urinalysis was negative; Wassermann reaction negative; transillumination of sinuses negative; radiographs of teeth negative; nose and throat examination gave nothing of importance. In fact, no etiological factor could be obtained. My diagnosis was intraocular tumor, involving the choroid; probably melanosarcoma.

I advised the patient to consult Dr. H. Gifford, who confirmed my findings and diagnosis. He referred the case to Dr. B. B. Davis, who thought there was already metastasis of the liver, and mentioned an exploratory incision. The patient returned to me for the eye work, but on account of the possibility of an exploratory at the same time, I advised him to return to Omaha. This, he did. The eye was enucleated, but no further work was done. I did not see the laboratory report in this case, but was reliably informed that it, also, confirmed the original diagnosis.

The patient has been under my care since the operation, and comes in for examination every two or three months. He has had no recurrence, no metastasis, and to all appearances, is in as good health now, three years after the operation, as he has been in the past ten years.

"It is not possible for every schoolboy to become president of the United States, nor is it possible for every doctor to become the leading surgeon or internist in some hospital, but it is possible for every doctor to become a real doctor if he has the nerve to learn his duty toward the sick, and the will power to do it."—Bush, Ky. Med. J.

TWO CASES OF FIBROMYOMATA.

Rudolph Rix, M. D., Omaha, Nebr.

Case 1.—Mrs. F. C. B., first consulted Dr. J. E. Simpson about Oct. 1st, 1922, on account of pain in the right side extending down the right leg, and pain in the back. These symptoms had existed for several years. Also complained of frequent urination during the past year.

HISTORY.

Mrs. F. C. B., age 39. Family History: Negative.

Past History: Has had ovarian trouble for some time. Says she has had abscesses.

Menstrual History: Began at 14, every 4 weeks, flows 3 days, moderate quantity, last period September 16th.

Marital History: Married at 22; no pregnancies.

Present Illness: As stated above has had pain in the right tuboovarian region extending down the right thigh; backaches for several years off and on. Frequent urination for the past year.

Gynecological Examination: Cervix displaced to the left. Pelvic cavity filled with a nodular mass felt mostly to the right of the cervix.

Diagnosis: Uterine fibroids.

Operation: Oct. 19th, 1922, at the Swedish Mission Hospital.

Findings: Two large subperitoneal fibroids the size of a small orange, prolapsed and adherent, with a sessile base attached to the uterus. Several small intramural fibroids. Both tubes and ovaries prolapsed, inflamed, and adherent. Gallbladder normal. Appendix not examined.

Operation: Supravaginal hysterectomy, including left tube and ovary.

Comment: This patient was led to consult a physician on account of pressure symptoms. The small size of the uterine cavity accounts for the absence of hemorrhage as a symptom.

Recovery uneventful.

Case 2.—Miss D. S., first consulted me August 1st, 1922, on account of excessive flowing, accompanied by passing of clots and pain, which she noticed mostly during the past 4 months.

HISTORY.

Miss D. S., age 21. Family History: Negative.

Past History: Had an operation for appendicitis 3 years ago.

Menstrual History: Began at 14. flowed every 4 weeks up to one year ago; during the last year she says she has flowed every two weeks. Also now has pains in her sides at her periods. Her flow during the last year, especially the last four months, has been accompanied by passing of clots. Last period one week ago.

Present Illness: Came on account of the excessive flow and passage of clots which symptoms she has had mostly for the past four months.

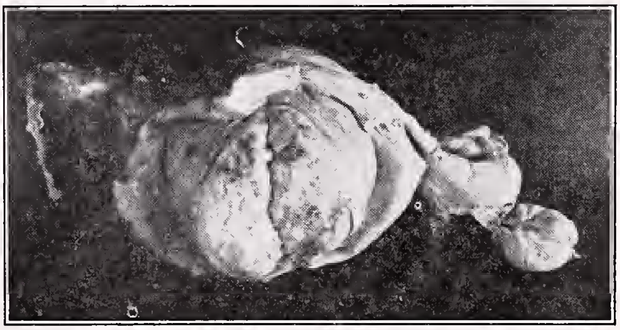
Gynecological Examination: Cervix normal, except slightly softened. The uterus is anteposed, symmetrical, softened and enlarged to what would correspond to a four months' pregnancy.

Diagnosis: Uterine fibroid of the intramural or submucous variety. Pregnancy with threatening miscarriage was suggested to the patient which she said was out of the question.

Operation: Aug. 10th, 1922, at the Swedish Mission Hospital.

Findings: Uterus was found about 6 inches in depth. In doing the preliminary sterilization of the uterine cavity, preparatory for hysterectomy, the dilator brought forth a free bloody discharge. Upon bimanual examination under ether the uterus felt too soft for a fibroid and too hard for a pregnancy. I concluded that a fibromyoma undergoing a degeneration was the correct diagnosis and accordingly did a laparotomy. The intraabdominal examination showed the uterus symmetrical and soft, very much like a pregnant uterus, but the tubes were inflamed and fimbria sealed, therefore pregnancy was out of the question.

Operation: Releasing of adherent tubes and ovaries with Supra-vaginal hysterectomy, including tubes and ovaries.



Uterus split anteriorly, and out towards each cornua. The tumor is seen springing from the posterior wall, distending the uterine cavity. The tumor is shown split vertically on the anterior wall. Before it was split it felt like a cystic mass.

Dr. Wohl's laboratory report shows a fibromyoma uteri undergoing hyaline degeneration.

Comment: This case is of interest on account of the simulation of a single intramural fibroid undergoing hyaline degeneration to a pregnancy.

The patient was led to consult a physician on account of hemorrhage. The hemorrhage was due to the tumor encroaching upon the uterine cavity.

Recovery uneventful.

BRIEF SYNOPOSIS ON FIBROMYOMATA.

Synonyms: Fibroids, myomata.

Cause: Obscure.

Facts impressing one with the frequency of fibromyomata.

32% of marriages where fibroids exist are sterile. (Kelly and Cullen).

80% are between 30 and 40 years of age. (Hunner).)

33% of all negresses over 20 have fibroids. (Cullen).

10% of all white women over 20 have fibroids. (Cullen).

Some texts claim 20% of all women over 30 have fibroids.

40% of women over 50 have fibroids. (Klob).

Lynch claims women over 50 menstruating have fibroids.

Location: Usually in the body of the uterus. Cervix in 5 to 6.6%.

Complications:

- Inflammation of the adnexa. In one-half of fibroid cases Kelly and Cullen found ovarian and tubal inflammation.
- Circulatory complications associated with fibroids.

Heart:

- Normal in 60% of cases.
- 30% show murmurs. These clear up after operation.
- 6% show dilatation with hypertrophy. These clear up after operation.
- 1% show valvular lesions.
- 1% show myocardial degenerations.
- Arteriosclerosis is commonly associated with myomata after middle life.

Renal Complications:

- Webster found renal disease in 30% of fibroids.

Postoperative:

- The proportion of deaths from thrombosis and embolism in fibroid cases is greater than following any other gynecological operation.

Degenerations:

- Benign:
  - Nearly all fibroids show hyaline degeneration microscopically. In 10% it shows macroscopically.
  - Calcareous degeneration, occasional.
  - Suppuration may occur from infection from bowel or uterus.
  - Necrosis may occur in pedunculated submucous fibroids.
- Malignant:
  - 4% are sarcomatous, 12% in women over 50.
  - 9% of submucous variety are sarcomatous.
  - Fibroids must predispose to cancer of the endometrium because in non-fibroid uteri, the ratio of cancer of the cervix is to body cancer as 15 to 1. In fibroid uteri the ratio is as 1 to 3. At the menopause, myomata show the greatest tendency to undergo malignant degeneration or predispose to malignancy of the endometrium.

Symptoms:

- Profuse menstruation.
  - Menorrhagia and metrorrhagia present in ½ cases (Hunner), ⅔ cases (Winter). This is the most frequent symptom and is proportionate to the amount of encroachment of the tumor on the endometrium.
- Leucorrhea.
  - This may be mucous, pus, watery, or foul odor.
- Pain, present in over ½ cases.
  - Pain greatest in the intra-ligamentous type and those associated with inflammation of the adnexa. (Tubal inflammation is a complication in 50% according to Kelly).
  - Painful and frequent urination in 25%.
  - Urinary frequency in 88%.
- Circulatory symptoms:
  - 50% show increase in pulse, palpitation and dyspnoea.
  - These improve after removal.

Diagnosis:

- Subperitoneal the easiest to diagnose.
- Interstitial and submucous the hardest. They usually show a distinct hardness. A single large interstitial fibroid may be hard to distinguish from pregnancy, as in Case 2.
- Bimanual palpation.
  - Submucous, uterus enlarged, symmetrical and harder than pregnant uterus.
  - Interstitial, Uterus irregular and increased in density. Increase in depth and irregularity of contour of uterine cavity.
  - Subperitoneal. Uterus knobby.

Things to be differentiated:

- Pelvic inflammatory masses of the adnexa.
- Pregnancy.
- Cystic and solid tumors of the ovary.
- Of less common occurrence:
  - Ectopic pregnancy.
  - Cancer of the uterus or ovary.

Treatment:

- Let alone:
  - Small tumor, late in life, of slow growth, no symptoms.
  - Re-examine patient every six months.
- For hemorrhage:
  - During hemorrhage. Rest. Ergot. Pituitrin. Horse serum. Gauze tamponade. No curettement.

Between hemorrhage. To restore blood. Iron. Arsenic. Ergotin grs. 1; Stypticin grs. 1; Hydrastinin grs. ½. One such every four hours.
Radium or X-ray to prepare patient for operation.

Operation urgent if:
- Rapid growth.
- If woman is approaching the menopause.
- Increasing irregularity of hemorrhage suggests the possibility of a malignancy of the endometrium complicating.

Choice of operations:
- Myomectomy, vaginal:
  - A single tumor attached to the vaginal portion of the cervix.
  - Submucous pedunculated myoma projecting from the cervix.
  - Submucous myoma in the cervix or lower uterine segment, this becomes more accessible after bisecting the anterior uterine wall (Anterior hysterotomy).
- Myomectomy, abdominal:
  - Subperitoneal or interstitial myomata, favorably situated and not to exceed 4 or 5 in number. In the child-bearing age if the patient wishes to preserve the child-bearing function.
  - Not indicated over 35 years.
- Hysteromyomectomy:
  - Multiple submucous myomata.
  - Myomata affecting the body of the uterus. (Multiple intra-mural).
  - Intraligamentous myomata.
  - Suppuration or malignant complication.
  - Associated suppurative disease of the adnexa.
  - If uterine cavity is infected.

Panhysterectomy:
- Myoma undergoing malignant degeneration.
- Myoma complicated with cancer of the body or cervix.
- If cervix is badly lacerated or hypertrophied to protect against future possibility of malignancy.

What to do with the adnexa:
- If normal leave them, especially in women under 35.
- If one is diseased remove that only.
- If infection exists in tubes and ovaries, remove them.
- If approaching or past the menopause, remove them.

Present status of the use of X ray and radium in myomata.
- Indications:
  - When hemorrhage is the main symptom.
  - Uterus is smaller than a four months' pregnancy.
  - If fibroids are of the intramural type.
  - If all parts of the uterine cavity can be reached by a diagnostic curettage.
  - If myomata are complicated by anemia, hemoglobin less than 50%, organic heart disease, diabetes, chronic nephritis, serious lung disease, or goiter with heart symptoms.
- Contraindications:
  - If myomectomy is possible without impairing the reproductive functions.
  - If the leading symptoms are due to pressure.
  - Uterus larger than four months' pregnancy.
  - If tumors are of the subserous or submucous variety.
  - If adnexal lesions cannot be excluded.
  - If degeneration of fibroids cannot be excluded.

    Note: 2% of all fibroids are sarcomatous.
    9% of submucous fibroids become sarcomatous.
  - If diagnostic curettage cannot positively rule out cancer of the endometrium.

Note: The indications and contraindications for use of X ray and radium are dependent upon so many "ifs" which are difficult to differentiate, that the surgical management is probably the choice procedure except where anemia, heart, kidney, lung disease, diabetes or goiter makes operation inadvisable.

THE OLD-TIME PHYSICIAN

Tho' the future may flout them and scout them,
The world had been sadder without them;
Tho' they rest in their graves without glory,
Tho' they live not in song nor in story,
No prophet—no priest—had a mission
More sacred thro' all the dumb years
Than that of the old-time physician,
Whose dust we bedew with our tears.

—Dr. James Newton Mathews.

THE NEBRASKA STATE MEDICAL JOURNAL

Published monthly by The Nebraska State Medical Association
609 Omaha Loan and Building Association Building, Omaha.

F. A. Long, M. D.,
Editor, Madison, Neb.
R. B. Adams, M. D.,
Associate Editor, Lincoln, Neb.
A. S. Erixon, Business Manager.
609 Omaha Loan and Building Association Building, 15th and Dodge Sts., Omaha, Neb.
Tel. At. 6918.

Committee on Journal and Publication.
F. A. Long, Chairman Madison
W. O. Bridges Omaha
B. F. Bailey Lincoln
R. B. Adams, Ex officio Lincoln

Subscription $2.50 Per Year. Single Copies 25c Each

The Publication Board does not assume responsibility for opinions expressed in original articles published in this Journal. Manuscripts should be typewritten, double-spaced, and the original, not the carbon, submitted.

Entered at the Post Office at Norfolk. Nebraska, as second class matter.

Vol. VIII December, 1923 No. 12

THE END OF VOLUME VIII.

With this the last number of Volume VIII of the Nebraska State Medical Journal is before you. The editor hopes you have liked it and he wishes it were better than it is. It is not for want of effort that the Journal is not better; neither is it for want of encouragement, for the profession has been most kind in tokens of appreciation.

Identic letters sent to forty honored members of the organized profesison in Nebraska recently, asking—What features can be added to the Journal to further improve its usefulness as the official organ of the Nebraska State Medical Association and as the exchange for medical knowledge between physicians of Nebraska?—brought a few, too few, replies, but some very good suggestions for the betterment of the Journal, which are thankfully accepted and will be adopted with the appearance of the January number.

The Journal is provincial; it is of, by and for, the medical profession of Nebraska and you would not have it otherwise.

Nebraska has a population of a million and a quarter. Less than three hundred thousand belong to the two metropolitan cities, Omaha and Lincoln and their environs; the balance are scattered over rural Nebraska. Is rural Nebraska doing its part by the Journal? Quite a number of small hospitals throughout the state are doing excellent work but little is heard about it. More time should be spent by these men to put some of their clinical work in shape for publication.

THE CONFERENCE OF STATE SECRETARIES AND EDITORS

It was the privilege of the secretary, Dr. R. B. Adams, and of your editor, to attend the conference of the secretaries of constituent state medical associations and a round table conference of editors of state medical journals, in Chicago at the headquarters of the American Medical Association, last month. A meeting such as this was, is an inspiration for any medical man. Inasmuch as the secretary will make a report of this meeting to the Association at the proper time it is not the province of the editor to go into details here. Among the outstanding ideas advanced at the conference were the need of postgraduate courses in every county, the need of proper cultivation of the social side of medicine at medical meetings, an executive secretary, and most outstanding of all, the dictum of Dr. Frank Billings, "Deliver the Goods," and pay less attention to cults and to the enactment of regulatory laws.

CLINICAL CONGRESS, AMERICAN COLLEGE OF SURGEONS. TENTH ANNUAL MEETING

The Clinical Congress held in Chicago the fourth week of October was attended by three thousand American surgeons and was full of interest throughout the week.

The hospital conference the first day developed the statistical fact that 1,786 hospitals had been surveyed and 1,176 approved as standard. The surgical conscience was dwelt upon with considerable emphasis. Ninety per cent of people have incomes of less than three thousand dollars and the relation of this class of people to the prevailing hospital and surgical fees was thoroughly threshed over. It was stated that there are about 150,000 trained nurses in the United States and Canada, of which number 12,000 are in public health work.

At the presidential meeting the first evening, after the passing of the gavel from Dr. Harvey Cushing to Dr. Albert J. Ochsner, Dr. George W. Crile delivered the Doctor John B. Murphy Oration in Surgery. In his thesis he defended with much philosophy and considerable energy his electro-chemical theory of life. Man is a mechanism actuated by electricity and chemical reaction—a machine made up of about twenty-eight trillion electric cells.

The laying of the corner stone of the John B. Murphy Memorial Building Tuesday afternoon was a most impressive event, in which the three daughters of the late Dr. Murphy participated.

Space allows mere mention of the three scientific evening meetings. Sir William I. de Courcy Wheeler of Dublin, Ireland, gave a paper on Unusual Renal Tumors; Dr. W. J. Mayo, Rochester, Minn., a paper on The Coordination of the Human Vegetative Functions; Dr. Fred H. Albee, New York, a paper on Rehabilitation Surgery, and our own Dr. J. M. Patton, Omaha, gave an address on Pain as the Result of Surgical Lesions of the Eye.

Forty hospitals furnished daily in endless variety, clinical material for the visiting surgeons.

At the convocation at the Auditorium theatre, Friday evening, October 26, Fellowships were conferred upon 527 surgeons, 422 of whom belong to the United States in civil life, 16 to the Army, 15 to the Navy, 29 to Canada and the remainder to various other countries, most of them, Central and South American.

Sir William I. de Courcy Wheeler, president of the College of Surgeons of Ireland, delivered the convocation address.

The following Nebraska surgeons were admitted to membership in the College of Surgeons:

Dr. Edward L. Brush, Norfolk;
Dr. William Frederick Callfas, Omaha;
Dr. John W. Duncan, Omaha;
Dr. Max Emmert, Omaha;
Dr. Czar Johnson, Lincoln;
Dr. Earle G. Johnson, Grand Island;
Dr. Benjamin R. McGrath, Grand Island;
Dr. John Beekman Potts, Omaha;
Dr. Frederick F. Teal, Lincoln;
Dr. James E. M. Thomson, Lincoln;
Dr. Claude T. Uren, Omaha.

Dr. Charles Mayo, Rochester, Minn., was elected president.

A Sectional Meeting of the College of Surgeons is to be held for Nebraska at Omaha about the middle of January.

THE TRI-STATE MEDICAL MEETING

For more than four days Des Moines was the medical center of the North American Continent. From October 29th to November 1st it was the host of the annual meeting of the Tri-State District Medical Association. This annual meeting, which has been rapidly gaining for itself the reputation of being the best medical meeting in North America, outdid all previous meetings.

Over a hundred men were gathered from all parts of Canada and the United States to present the latest in all the branches of the medical science. The program was the most ambitious one ever planned and carried out in the annals of the medical profession.

Of more than usual interest were the symposia held under the auspices of the following medical schools:

Northwestern University — Angina Pectoris, under the direction of Dr. F. A. Besley, assisted by Drs. Holmes, Ransom and Carr.

University of Iowa—Visceral Syphilis, under the direction of Dr. C. P. Howard assisted by Drs. Gatewood, Van Epps and Rohner.

University of Chicago—Infections, under the direction of Dr. Dean Lewis, assisted by Drs. Phemister, David, Bevan, Dick and Grules.

University of Wisconsin—The Development of the New Arsenicals in the Treatment of Neuro-Syphilis. Dr. A. S. Lovenhart and Dr. W. F. Lorenz.

Western Reserve University—Tumors of the Uterus from the Standpoint of Surgery and Ray Therapy, under the direction of Dr. G. W. Crile, assisted by Drs. Portman and Jones.

University of Michigan—Nephritis, under the direction of Dr. Hugh Cabot assisted by Drs. Newburg and Warthin.

University of Minnesota (Mayo Clinic)—Abnormal Thyroid Function, under the direction of Dr. Henry S. Plummer assisted by Drs. Boothby and Pemberton.

In addition to the above symposia given by the medical schools, there was a symposium on Diabetes with Drs. E. P. Joslin, L. H. Newburgh and Rollin T. Woodyat, and a symposium on Fractures with Drs. Baer, Cotton, Ely, Lewis, Speed and Trout from Johns Hopkins, Harvard, Stanford, Rush and Roanoke, Virginia.

Practically all the medical schools of the continent were represented on the program by the professors of medicine and surgery. The University of Toronto was represented by the president Sir Robert Falconer. The Leland Stanford University by its president, Dr. Lyman Wilbur, who is also president of the American Medical Association. And while we are speaking of presidents, Dr. W. A. Pusey, the president-elect of the A. M. A., was present and gave a talk on the treatment of Syphilis. Sir William de Courcy Wheeler, president of the Royal College of Surgeons of Ireland, gave a most interesting talk on surgery in Ireland.

The sessions began at seven o'clock in the morning and as a rule lasted through to ten o'clock at night with very short intervals for meals.

On Thursday night the meeting was closed by a banquet at which over five hundred and fifty men and women were present. Short addresses were made by Sir Robert Falconer, Dr. Lyman Wilbur, Dr. W. A. Pusey, Dr. W. J. Mayo, Dr. H. M. Brown, president of the Tri-State Medical Association, and Dr. A. C. Page of Des Moines, the president-elect of the Tri-State Association. Hon. Albert B. Cummins, U. S. Senator, also spoke.

The registration was a little over sixteen hundred and fifty, all of whom seemed to be present most of the time when one attempted to find a seat upon arriving late for the session. The meetings were held in the beautiful new building of the Women's Club of Des Moines, the auditorium of which has a seating capacity of over fourteen hundred. It was the most comfortable seating arrangement that the men have ever found at such large meetings, the acoustics of the hall were perfect and everything necessary to the comfort of a medical man at a medical meeting was at hand in this building. The hospitality of Des Moines was unbounded, the hotels and the clubs and even the taxicab drivers and newsboys made things pleasant for the medical visitor.

All the clinics were held in the same building and over a hundred and eighty-nine cases were available in the building for the use of the visiting clinicians in their clinics. One of the most remarkable clinics was that of Dr. Elliot P. Joslin on Diabetes where there were forty diabetics on the stage ranging from sixteen months to seventy-five years of age.

Dr. Byron B. Davis of Omaha was the representative of Nebraska. He presented a paper: What Progress Are We Making In the Treatment of Cancer?

There was no doubt in the mind of anyone to whom the credit was due for the wonderful program, i. e., the managing director of the Tri-State Society, Dr. William B. Peck, Freeport, Illinois. In addition two other men must be mentioned, President H. M. Brown of Milwaukee, whose work was largely behind the scenes, and his confrere from Milwaukee, Dr. G. V. I. Brown, who in the face of the great odds engineered a program to the satisfaction of both speakers and audience. The entire meeting is a monument to the united efforts of physicians of Des Moines, for not alone during the time of the meetings, but for the months they have been devoting their time and finances to the preparation of this remarkable program.

Many Nebraska physicans and surgeons attended the meeting.

—F. W. Heagey.

HELPING EACH OTHER

"The members of the medical profession are not in the habit of helping each other. This has been so from time immemorial and will probably always be so."

The above is taken from a letter received from an active and conscientious doctor, a few days ago. It seems so germain that the writer is choosing it for the subject matter of this editorial. At no time has the medical profession had to defend itself against attacks from almost innumerable angles as at the present. These attackers have nothing or almost nothing on which to base their campaigns, and owe their success to the lack of information of the people, and to the mystic element which is in all of us. On the other hand the medical profession, in things done for humanity, has enough material to everlastingly swamp these foes, if it was being used by an organization, working as smoothly and efficiently as the machines of those working against us. The work of this organization would be simply a Campaign of Education and no direct attack would be made on anyone.

The framework for such an organization was created at the last Annual Meeting, in the Publicity Committee. This committee is ready to begin its work, but it will not accomplish much unless every member of the state Association is devotedly working with it. This will take a conscious effort on the part of every one of us, but this effort can and must be made.

One aim of this committee is to enlist the cooperation of as many other allied organizations as possible. This can be done if our own Association is working well enough to attract them, otherwise not. This, then, is the thought quoted above. Every member work for the good of everybody else and in this way help our new committee.

—R. B. Adams.

THE ECONOMICS OF MEDICINE AND SURGERY

During the past few years a great deal has been written and spoken in connection with the economic phase of medicine.

We often hear the statement made that the family physician is entitled to as much for his diagnosis as the surgeon for the operation which relieves or cures the patient. If the surgeon is to be considered merely as an operator this aforesaid claim is absolutely true. However, the modern surgeon of today has three distinct characteristics, namely: diagnostic ability, operative technique, and surgical judgment. The greatest of these is surgical judgment, next in importance is diagnostic ability, and lastly operative technique. Men who are operating upon the human body should be classed as butchers, operators and surgeons according to their ability, and the value of their services should be estimated to a certain extent by the group to which they belong.

Every physician is worthy of his hire and in surgical cases the value of his services should be based upon his diagnostic ability and his judgment as to the proper time for referring the patient to the surgeon. Unfortunately the laity has been educated to value a physician's services at so much per mile or so much per call. The physician who carries through to a successful issue a severe case of pneumonia, for example, should base his charge upon the services rendered and not upon the number of calls made. Likewise, the physician who diagnoses an acute fulminating appendicitis and refers the patient in time to save his life is entitled to more than mileage, and I am satisfied from my own observations, that when this is explained to the patient he is perfectly willing to adequately compensate his physician.

The greatest difficulty in these matters is the fact that so many physicians are afraid of their patients. They want their people to think that they are serving them purely for love and then try to collect an exhorbitant fee from some unscrupulous surgeon who charges the patient twice as much as the services are worth. Under these conditions it is not remarkable that so many people have lost confidence in the medical profession and are turning to the "isms" and "pathies."

What we need in medicine today is more men of rugged honesty who have the courage of their convictions and who will practice medicine openly. Men who give their patients the best they have, and are more interested in the relief of the patient than in the fee which they will derive from the case. I feel satisfied that the people are perfectly willing to pay reasonable fees for real service.

—Max Emmert.

EDITORIAL PARAGRAPHS

Three deaths from bacillus botulinus poisoning by eating canned green beans were reported from Morrill, in October.

Dr. Carl Wilson, Palo Alto, Calif., reported to the American College of Surgeons that hot applications of magnesium sulphate applied to the abdomnn will prevent post operative gas pains.

According to Dr. William J. Mayo, the experience at the Mayo clinic has been that 71.8% of patients operated on for cancer when the disease is still localized have been cured.

A first class medical scandal has been unearthed in St. Louis where it appears fraudulent high school diplomas and fraudulent medical diplomas have been articles of traffic from a so-called National University of Arts and Sciences.

The Nobel prize for medical research was awarded to Dr. F. G. Banting and Dr. J. J. R. MacLeod, professors in Toronto university, for discovery of insulin.

The United States army has sent 3,300 tons of medical supplies, 5,000 tents and cots, 255,000 pieces of underwear, 600 tons of rice and 100,000 blankets to the thousands of sufferers from the earthquake in Japan.

A native Javanese physician, name not given, is reported to have discovered a new and more certain cure for leprosy than chaulmoogra oil. It is a synthetic coal tar product called timol. Long and painstaking investigations with the backing of the Dutch-Javanese government have been carried on and a report will soon be forthcoming.

According to Dr. Hubert Work, Secretary of the Interior, there are now approximately 340,000 Indians in the United States, an increase of 13,500 in the last ten years. Of this number approximately 19,000 are suffering from acute and latent tuberculosis and almost 28,000 are suffering from trachoma.

THE SOCIETIES

The Annual Session of **the John A. Creighton Alumni Association** took place November 1-3. Clinics were held at the various hospitals November 1 and 2 and November 3 was Home Coming Day, featured by a barbeque, Haskell Indians-Creighton football game and an alumni reception and smoker.

On the evening of November second, Dr. Geo. B. Eusterman of Mayo Clinic, presented a paper on the "Vogue of Medical Cult."

Following the reading of the above paper and the "smoker" the annual election of officers took place and the results were as follows: Dr. G. W. Dishong, president, Omaha, Nebraska; Dr. M. M. Sullivan, vice-president, Spalding, Nebraska; Dr. A. G. Lueschen, vice-president, Columbus, Nebraska; Dr. H. J. Jenkins, secretary-treasurer, Omaha, Nebraska.

The **Eighth Councilor District and Holt County Medical Societies** met at Ainsworth, October 24. Dr. G. O. Remy, Ainsworth, was elected president and Dr. F. L. Wilson, Stuart, secretary-treasurer. The attendance was good and the meeting excellent. The following program was carried out: "What the People Think of Us and Why," Dr. G. O. Remy, Ainsworth, Neb.; "Presentation of Case," Dr. T. K. Jones, Ainsworth, Neb.; "Abdominal Trauma," Dr. Chas. H. Root, Bassett, Neb.; "Hemoperitoneum,"—Report of Case, Dr. F. L. Wilson, Stuart, Neb.; "Placenta Praevia, Treatment and Report of Cases at Full Term," Dr. J. P. Gilligan, O'Neill, Neb.; "Nasal Conditions and Their Influences," Dr. Geo. A. Griot, Chadron, Neb.; "Minimal Tuberculosis or Common Sense Diagnosis," Dr. John F. Allen, Omaha, Neb.

The Seventh **Councilor District Medical Society** met in annual session at Hebron, October 18, and the following program was carried out: "Ileus"—V. V. Smrha, M. D., Milligan; "Obesity"—W. L. Welsh M. D., Fairbury; "Traumatic Amputation of Scapula with Report of Case"—Chas. G. McMahon M. D., Superior; "Science, Art and Business"—A. J. Bowles M. D., Hebron; "The Treatment of Diabetes with Insulin"—Frank Conlin M. D., Omaha; "X-Ray Interpretation of Lumbar Spine and Sacro-Iliac Articulation"—A. P. Overgaard M. D., Omaha.

This was followed by a banquet given by the Thayer County Medical Society at the Central Hotel at which afterdinner talks were made by Dr. B. F. Bailey, president, Nebraska State Medical Association and by Dr. A. J. Jennison, Harvard.

Dr. Jos. Bixby, Geneva, was elected president. The secretary of the councilor district is permanent secretary.

The Twelfth Councilor District Medical Society held its fall meeting at Scottsbluff, Monday, October 15. This completes the second year since organization of the society, and the meeting was the most successful one the society has held. The society now includes the whole territory known as the "Pan Handle of Nebraska". Great things are expected in the future for this society with the increase of territory. The following papers—every one a good one—were presented: Dr. George A. Griot, Chadron, "Tonsillar Intoxication"; Dr. Philip Work, Denver, "Borderline or Questionable Psychosis in its Relation to the Community"; Dr. Frank E. Clough, Lead, S. D., "Fractures of the Leg"; Dr. J. N. Hall, Denver, "Embolism and Thrombosis."

Dr. George J. Hand, Alliance was elected president, and Dr. W. C. Harvey, Gering, secretary-treasurer.

The next meeting will be held at Crawford in spring.

Before the **Lancaster County Medical Society,** November 3, Dr. Gerald B. Webb, Colorado Springs, Colo., gave a lecture on "Tuberculosis". He emphasized the fact that there is no one finding in an examination that is diagnostic, but all phases must be exhausted. He laid special stress on history taking. This is hard to get but important. In this, tuberculosis in the family during the childhood of the patient and frequent colds, are important points. Other points stressed were the general examination, the physical examination, especially inspection and percussion, and finally the X-ray. Dr. Webb concluded by showing a number of lantern slides, some of which were diagnostic and some to show the results of treatment.

The calendar and program for the remainder of the society year follows: December 15, election of officers; January 5, Carcinoma of the Cervix Uteri, Dr. I. C. Munger; Recent Epidemics of Smallpox, Dr. H. H. Waite; January 19, The Diagnosis of Renal Calculi, Dr. C. H. Bastron; The Use of a Lever for Reducing Certain Fractures, Dr. J. E. M. Thompson; February 2, Interpretations of Physical Signs as Viewed of Cardio-Vascular, Dr. S. C. Clements; Premature Contractions of the Heart in One Hundred Cases, Dr. A. L. Smith; February 16, Guests; March 1, High Degrees of Heat in Surgery, Dr. C. H. Breuer; Hay Fever Treatment by Pollen Extract Inoculation, Dr. A. H. Webb; March 15, Psychiatry in Its Close affiliation with General Medicine, Dr. B. F. Bailey; A Much Neglected Disease, Dr. P. H. Bartholomew; April 15, Guests; April 19, Diarrhea of Infancy; Dr. E. V. Wiedman; Complications of Surgery, Dr. C. C. Hickman.

The **Scotts Bluff County Medical Society** held its regular monthly meeting at Scottsbluff on the evening of Nov. 8th, with eleven members present.

After due discussion of the diphtheria culture-media box now supplied by the State Health Department, a motion was made, seconded and carried to send to the Bureau of Health a letter setting forth our disapproval of the box.

Dr. E. F. Zoerb of Scottsbluff presented a very interesting paper on "The Insulin Treatment of Diabetes Mellitus." Dr. J. B. Schrock of Scottsbluff read a very good paper on "The Significance of Acute Leukocytosis."

On Tuesday evening, Nov. 6, Doctors Byers and Hamilton, of Friend, gave a dinner to the **Saline County Medical Society.** Those present were, Dr. C. H. Arnold, of Lincoln; Drs. Stratton and Wiggins of Exeter; Dr. Muir and Wertman of Milford, and Dr. Williams of Beaver Crossing, as guests. The members present were: Dr. Cross of DeWitt, Dr. Dodson of Wilber, Drs. Pallatte, Stejskal and Conrad of Crete and Drs. Panter and Hansen of Dorchester. After dinner Dr. Arnold gave a paper on "Shock, It's Treatment and Prevention." The paper was ably presented and of great interest to the doctors. It was discussed by Drs. Dodson, Byers, Stratton, Cross and Conrad. About once a year the Friend physicians give a dinner to their professional associates, when they eat, smoke and try to learn something "new under the sun."—Friend Sentinel.

At the **Custer County Medical Society** meeting at Broken Bow, November 15, Dr. Theodore Koefoot, Broken Bow, was elected president, Dr. C. L. Mullins, Broken Bow, secretary-treasurer. Dr. W. N. Anderson, Omaha, gave a lecture on "Heart Problems"; Dr. C. L. Mullins, Broken Bow, "Principles As Involved in X-ray Treatment"; Dr. P. H. Carothers, Mason City, "Surgical Problems."

At the **Madison County Medical Society** meeting at Norfolk, Nov. 20, Drs. A. T. Bailey and L. L. Nelson, Norfolk, gave dissertations on "Sinuses."

The **Johnson County Medical Society** held an all-day lay meeting at Tecumseh, November 21, the object being to meet with the public for the consideration of matters pertaining to the public health. A baby clinic was one of the features.

Dr. B. W. Sippy, of Chicago, will be in Omaha on December 11th as a guest of the **Omaha-Douglas County Medical Society.** The profession is invited to attend this meeting. Dr. V. P. Blair, St. Louis, spoke before the society Nov. 13.

The **Republican Valley and Tenth Councilor District Medical Society** met in fall session at the Court House in Holdrege, October 25th, 1923. Forty-five doctors were in attendance. Dr. Philip Work of Denver and Dr. John B. Potts of Omaha were guests. Dr. A. L. Kee of Cambridge presided over the meeting with Dr. L. W. Rork of Hastings acting secretary and treasurer.

Following the morning business session, an excellent luncheon was served by the Methodist Church ladies in the church dining room. Dr. Work talked on the "Social Aspect of the Care of the Feeble-Minded," and Dr. Ella P. Sumner of Hastings spoke for the charter membership of the organization.

At the afternoon session the following program was given: "Common Choreas, Their Diagnosis, Prognosis and Treatment"—Dr. Philip Work, Denver; "Mastoiditis, Complications of"—Dr. John B. Potts, Omaha; "Vincent's Angina, with Report of Cases"—Dr. John B. McPherson, Hastings; "Modified Milk in Infant Feeding"—Dr. Elizabeth Hohl, McCook; "Diagnostic Value of the Fontanelle in Infancy"—Dr. C. R. Spicer, Hastings; "Office Treatment of Wounds"—Drs. R. H. Kerr, Alma, and F. A. Brewster, Hastings.

The newly elected officers are: President—E. Hamel, Hastings; vice-president—R. D. Green, Holdrege; secretary—Elizabeth Hohl, McCook; treasurer—L. W. Rork, Hastings.

The next meeting will be held in Minden in May, 1924.

NOTES ABOUT THE DOCTOR

Dr. Margaret B. Stirling, of Burton, is to locate in Springview.

Dr. R. E. Moyer has moved from Western to Cedar Bluffs.

Dr. Freeda M. Clarke formerly of Omaha has located at Tilden.

Dr. Chas. W. Gooden, formerly of Yutan, has located at Harvard.

Dr. Marcus Hoops is about to move from Springview to Ainsworth.

Dr. G. L. Smith has opened an office in North Platte to practice surgery.

Dr. T. V. Talcott, former practitioner of Crofton has located at Republican City.

Dr. J. F. Smith, for some time located at Dodge, has decided to locate in Chicago.

Dr. John Buis, Pender, attended the Tri-State Medical society at Des Moines in October.

Dr. Martha MacVean-Edmonds, Nebraska City, has recently recovered from a broken arm.

Dr. Stanley Clements has been made examining physician of the tuberculosis clinic at Lincoln.

Dr. W. W. Claybaugh, Republican City, has sold his interests in that place and moved to Colorado.

Dr. C. A. Roeder, Omaha, spoke on cancer before the Fremont Chamber of Commerce, October 22.

Dr. Floyd Clarke, Omaha, attended the Central States Pediatric association at Detroit, Oct. 18-19.

Dr. E. O. Wilson, Madison, submitted to a serious operation in an Omaha hospital early in November.

Dr. J. North Evans, Columbus, has recently been elected commander of the local American Legion post.

A damage suit against Drs. Taylor and Taylor, University Place, has recently been decided in their favor.

Dr. H. W. Schmitz, Omaha, is in the urology department of the University of Penn., Postgraduate School.

Dr. J. E. Warrick, has left Wood Lake and after a short period of post-graduate study will locate at Chadron.

Dr. Arthur Griot, Chadron, has returned from a six months' period of study of the eye in Vienna and Budapest.

Dr. E. W. Rowe, Lincoln, gave a lecture on the X-ray to the Sigma Xi society of the state university, October 25.

Panama, Nebraska, a prosperous community 25 miles southeast of Lincoln, is very much in need of a physician.

Dr. and Mrs. Sergius Morgulis and daughter, Omaha, spent several months on the California coast in early fall.

It is reported that Dawson has a new physician in the person of Dr. F. R. DeHoney, late of Fredericktown, Mo.

Dr. J. B. Ralph, well-known octogenarian physician of Omaha, visited the home of his childhood in Delaware, recently.

Dr. Irving L. Thompson, West Point, attended the Tri-State Medical association meeting at Des Moines, Oct. 30-Nov. 1.

Dr. C. E. McReynolds, of LaJunta, Colo., has located at Yutan. He was a practitioner in Nebraska in former years.

Dr. Hobart A. Hare, noted Philadelphia internist, was recently called to Omaha in consultation over an organic heart lesion.

Dr. J. S. Simms, North Platte, attended the National Convention of the American Legion at San Francisco in October.

Dr. A. B. Dunn, formerly of Nebraska sanitarium, Hastings, has opened a hospital in the Winton apartments, Nebraska City.

Dr. L. F. Chapman, West Point, was ill with broncho-pneumonia and a patient at an Omaha hospital during November.

Dr. W. P. Wherry, Omaha, attended the American Academy of Ophthalmology and Otolaryngology at Washington in October.

Dr. Thomas Houlton, Omaha, is in the nervous and mental department of the Postgraduate School of the University of Pennsylvania.

Dr. C. H. Campbell, Columbus, attended the annual meeting of the eye, ear, nose and throat men at Washington in mid-October.

Dr. and Mrs. Clare Rubendall, Omaha, attended the Washington meeting of the American Academy of Ophthalmology and Otolaryngology.

Dr. Charles Ulrich, Valentine, is taking the regular first year course in internal medicine at the University of Pennsylvania Postgraduate School.

It is announced that Dr. A. J. Jennison, Harvard, president pro tem. of the House of Delegates the last two years, has retired from active practice.

Dr. Robert McConaghy, York, attended the annual meeting of the Northwestern Railway Surgeons association in Chicago the middle of October.

Dr. Stuart B. MacDairmid, Omaha, spoke on "Ideas" before the convention of the Reliable Life Insurance company at the Fontanelle, Oct. 12.

Dr. J. H. Murphy, Omaha, attended the joint meeting of the American Child Hygiene association and the Central State Pediatric society at Detroit in October.

Dr. A. J. Garner, Orleans, was one of the Nebraska profession to attend the meeting of the Tri-State Medical society meeting at Des Moines, October 30-Nov. 1.

Dr. Robert Farrell, formerly of Omaha, more recently of Point Conception, Mo., is doing special work in the surgical department of the Postgraduate School of the U. of P., Philadelphia.

Dr. C. P. Fordyce, Falls City, Councilor for the Third Councilor District, is the author of "Trail Craft", a book for the vacationist, a 12 mo. silk cloth volume, published by Steward Kidd, Cincinnati.

Dr. F. E. Coulter, formerly of Omaha, now a resident of Santa Ana, California, read a paper Nov. 6, before the Orange county medical society on "Some Observations upon the Relation of Syphilis and Nervous Diseases."

It is reported that Dr. H. C. Hansen, for some time a practitioner at Seneca, has located at Marquette, and that Drs. Walker and Bruce of Mullen will open an office at Seneca, in an endeavor to serve the two communities.

Dr. J. A. Henske, Omaha, attended the meeting of the Central States Pediatric association and the American Child Hygiene association held at Detroit in October. He also visited the clinics at Toronto and Montreal, Canada.

A medical social service department has been organized at the U. of N. College of Medicine. Dr. J. Jay Keegan is in charge of the dispensary and Miss Grace Buckley, trained at Columbia university, will superintend the social work.

Dr. A. G. Lueschen, Columbus, is going to have the courts decide whether the county is liable for emergency services rendered to people unable to pay, in an appeal from the decision of the Platte county Board of Supervisors.

Two hundred students, constituting the premedical group of the State University, gave a dinner November 9, at which time Dr. J. Jay Keegan of the College of Medicine at Omaha, Dr. W. C. Becker, Lincoln, and Dr. F. D. Barker of the university, gave addresses.

The hegira of Omaha medical men to the newly completed Bankers Reserve Life building has begun. To date we have announcements that Dr. J. E. Summers has moved into suite 426; Dr. A. P. Overgaard, to suite 539; Drs. Lemere and Bannister to suite —; Dr. Clyde Roeder to suite 520.

Nebraska surgeons in attendance at the Clinical Congress at Chicago and noted by this scribe: Dr. C. A. Allenberger, Dr. C. H. Campbell, Dr. F. H. Morrow, Columbus; Dr. B. H. McGrath, E. G. Johnson, Grand Island; Dr. C. W. Slagle, Alliance; Dr. O. H. Hahn, Hastings; Dr. E. L. Brush, Norfolk; Dr. J. S. Welch, Dr. F. B. Hollenbeck, Dr. J. E. M. Thompson, Dr. C. C. Johnson, Lincoln; Dr. J. P. Lord, Dr. C. A. Roeder, Dr. J. W. Duncan, Dr. W. F. Callfas, Dr. C. T. Uren, Dr. J. F. Langdon, Dr. G. F. Simanek, Dr. J. M. Patton, Dr. D. T. Quigley, Dr. J. R. Nilsson, Dr. Rudolph Rix, Omaha, and Dr. F. A. Long, Madison.

HOSPITAL NOTES

It is announced that possession of the Campbell hospital, Norfolk, will pass to the Lutheran hospital board of north Nebraska, December 1.

It is announced that Dr. J. S. Taylor, Fairbury, will father a new hospital.

The Holdrege hospital has changed hands and is now under the management of Miss Lillian Steele, registered nurse.

Completion of the Carothers hospital, a 54 room, 4-story building at Broken Bow, is announced.

The opening of a hospital in the Winton apartments, Nebraska City, by Dr. A. B. Dunn, formerly of Hastings, is announced.

HYMENEAL

Dr. G. W. Bartlett of Wisner and Miss Mabel Race of Scribner were married at Sioux City, October 31.

The marriage of Dr. Adolph Srb, Omaha, and Miss Rose Marie Wagner, Fremont, has been announced.

NECROLOGICAL

Dr. M. A. Carriker, Eclectic Medical College, Cincinnati, 1885, pioneer physician of Nebraska City, prominent in political circles for many years, died at Kansas City, November 7, aged about 75.

Dr. L. D. Rose, Nebraska University College of Medicine, 1921, a practitioner at Utica, died November 15, age about 28. Interment in Omaha.

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, January, 1923. No. 1

CALCREOSE

In inflammation of the respiratory tract, especially in **Bronchitis**

CALCREOSE (calcium creosotate) a mixture containing in loose chemical combination, approximately equal weights of creosote and lime, is of value.

CALCREOSE differs from creosote in that it does not have any untoward effect on the stomach; hence patients do not object to its administration.

CALCREOSE lessens cough and expectoration, and acts as an intestinal antiseptic, which is of value in treating the bronchitis associated with pulmonary tuberculosis.

POWDER SOLUTION TABLETS

Literature and samples on request

THE MALTBIE CHEMICAL COMPANY, NEWARK, NEW JERSEY

College of Physicians of Philadelphia Library JAN 4 1923

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY

Farnam at Seventeenth

Physiotherapy Simplified

Beginning on Monday, January 8th, Major C. M. Sampson will give a course of lectures at the Fontenelle Hotel in Omaha, covering the entire field of physiotherapy. This course will take up and explain all of the basic laws and the applied physics of every form of electricity, forms of heat, radiant energy — X-ray, Ultra-Violet Ray and Visible light, massage and exercises, hydrotherapy including whirl pool baths, contrast baths, etc.

Major Sampson had charge of the physiotherapy service at U. S. A. Hospital, Number 9, Lakewood, New Jersey, later at the U. S. A. Hospital, Number 41, Fox Hills, New York and still later at the U. S. A. Hospital Number 71, Hudson Street, New York. Dr. Sampson's Clinic at Fox Hills was the largest of its kind in the world and treatments there reached an average of twenty-three hundred per day, exclusive of occupational therapy of special classes. His physiotherapy personnel reached a hundred and ten doctors and reconstruction aides. As a result of the advanced techniques worked out and the success attending their use, this clinic was made an official training center and the government Medical Services are still sending personnel wherever possible.

A feature of the course is the complete manner in which all the physics involved and the reactions following the application of these physical remedies to various pathologies are explained — making it of the utmost value to anyone practicing therapy in any of its branches. Many new techniques for the use of the Ultra-Violet Light founded on research done by Dr. Sampson will be given.

The class will be limited. For further details and anyone wishing to enter this class should address replies to Chas. L. Brooks, secretary, Fontenelle Hotel, Omaha, Nebraska.

"THIS COURSE DOES NOT COVER DEEP X-RAY THERAPY."

RADIUM RENTAL SERVICE

BY

THE PHYSICIANS RADIUM
ASSOCIATION of CHICAGO, Inc.

Incorporated under the laws of Illinois, not for profit, but for the purpose of making radium available to Physicians to be used in the treatment of their patients. Radium loaned to Physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

Careful consideration will be given inquiries concerning cases in which the use of Radium is indicated

THE PHYSICIANS RADIUM ASSOCIATION
1105 Tower Bldg., 6 N. Michigan Ave.
CHICAGO, ILL.

Telephones:
Randolph 6897-6898

Managing Director:
Wm. L. Brown, M. D.

BOARD OF DIRECTORS

William L. Baum, M. D.
Wm. L. Brown, M. D.
Frederick Menge, M. D.
Thomas J. Watkins, M. D.
Louis E. Schmidt, M. D.

DISTRIBUTORS

Pharmaceuticals
- Sharp & Dohme
- John T. Milliken Co.
- Burroughs Wellcome Co.
- Lloyd Brothers

Specialties
- Parke Davis & Co.
- H. K. Mulford & Co.
- Hynson Westcott and Dunning
- H. A. Metz Laboratories
- Abbott Laboratories
- Wilson & Co.
- Armour & Co.
- G. W. Carnrick
- Reed & Carnrick
- Ciba & Co.
- Winthrop Chemical Co.
- Schieffelin & Co.
- Luyties Pharmacal Co.
- Waterbury Chemical Co.

Biologicals
- Lederle Antitoxin Laboratories
- H. K. Mulford Co.

Davol Rubber Goods
- Johnson & Johnson's Dressings
- Laboratory Glass Ware

LET US HAVE YOUR NEXT ORDER

DONLEY STAHL Co.
DEPENDABLE SERVICE

THE PHYSICIAN'S SUPPLY HOUSE
915 "O" St. Lincoln, Neb.

LINCOLN NUMBER

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, February, 1923. No. 2

CALCREOSE

In inflammation of the respiratory tract, especially in **Bronchitis**

CALCREOSE (calcium creosotate) a mixture containing in loose chemical combination, approximately equal weights of creosote and lime, is of value.

CALCREOSE differs from creosote in that it does not have any untoward effect on the stomach; hence patients do not object to its administration.

CALCREOSE lessens cough and expectoration, and acts as an intestinal antiseptic, which is of value in treating the bronchitis associated with pulmonary tuberculosis.

POWDER SOLUTION TABLETS

Literature and samples on request

THE MALTBIE CHEMICAL COMPANY, NEWARK, NEW JERSEY

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY

Farnam at Seventeenth

Alpine Sun Lamp

The Alpine Sun Lamp
The Kromayer Lamp

The Alpine Sun Lamp is one of the foremost producers of Quartz light therapy—Utra-Violet rays, and is an efficient and practical means of administering quartz light therapy.

Its field of indication covers the treatment of disease in most of its manifestations.

We will be pleased to send you some very interesting literature and proofs upon request.

QUOTATION

Alpine Sun Lamp, A. C. 110 Volt	$470.00
Kromayer Lamp, A. C. 110 Volt	545.00
Combination, A. C. 110 Volt	865.00

Write for terms and discounts

WESTERN X-RAY COMPANY
OMAHA, NEBRASKA.

RADIUM
RENTAL SERVICE
BY
THE PHYSICIANS RADIUM
ASSOCIATION of CHICAGO, Inc.

Incorporated under the laws of Illinois, not for profit, but for the purpose of making radium available to Physicians to be used in the treatment of their patients. Radium loaned to Physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

Careful consideration will be given inquiries concerning cases in which the use of Radium is indicated

THE PHYSICIANS RADIUM ASSOCIATION
1105 Tower Bldg., 6 N. Michigan Ave.
CHICAGO, ILL.

Telephones:
Randolph 6897-6398

Managing Director:
Wm. L. Brown, M. D.

BOARD OF DIRECTORS
William L. Baum, M. D.
Wm. L. Brown, M. D.
Frederick Menge, M. D.
Thomas J. Watkins, M. D.
Louis E. Schmidt, M. D.

DISTRIBUTORS

Pharmaceuticals
- Sharp & Dohme
- John T. Milliken Co.
- Burroughs Wellcome Co.
- Lloyd Brothers

Specialties
- Parke Davis & Co.
- H. K. Mulford & Co.
- Hynson Westcott and Dunning
- H. A. Metz Laboratories
- Abbott Laboratories
- Wilson & Co.
- Armour & Co.
- G. W. Carnrick
- Reed & Carnrick
- Ciba & Co.
- Winthrop Chemical Co.
- Schiefflin & Co.
- Luyties Pharmacal Co.
- Waterbury Chemical Co.

Biologicals
- Lederle Antitoxin Laboratories
- H. K. Mulford Co.

Davol Rubber Goods
- Johnson & Johnson's Dressings
- Laboratory Glass Ware

LET US HAVE YOUR NEXT ORDER

DONLEY STAHL Co.
DEPENDABLE SERVICE

THE PHYSICIAN'S SUPPLY HOUSE
915 "O" St. Lincoln, Neb.

RURAL NEBRASKA NUMBER

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, March, 1923. No. 3

CALCREOSE

In inflammation of the respiratory tract, especially in **Bronchitis**

CALCREOSE (calcium creosotate) a mixture containing in loose chemical combination, approximately equal weights of creosote and lime, is of value.

CALCREOSE differs from creosote in that it does not have any untoward effect on the stomach; hence patients do not object to its administration.

CALCREOSE lessens cough and expectoration, and acts as an intestinal antiseptic, which is of value in treating the bronchitis associated with pulmonary tuberculosis.

POWDER SOLUTION TABLETS

Literature and samples on request

THE MALTBIE CHEMICAL COMPANY, NEWARK, NEW JERSEY

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

PUREBRED

Holstein Milk

For Infant Feeding

Referring to the Holstein cow in his text book "*Pediatrics*," Dr. Rotch says: *"This cow represents the most perfect milking animal known, having every characteristic of a cow suitable for an infants' milk supply."*

More than a half million purebred Holsteins are supplying milk to all parts of the United States. If your patients can not obtain purebred Holstein milk write us and we will assist them in securing it. Complete information gladly given on request.

EXTENSION SERVICE
The Holstein-Friesian Association of America
230 East Ohio Street, Chicago, Ill.

Trademark Registered **STORM** Trademark Registered

Binder and Abdominal Supporter

(PATENTED)

Trade Mark Reg.

Trade Mark Reg.

For Men, Women and Children

For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder.
Mail orders filled at Philadelphia only—within 24 hours.

Katherine L. Storm, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond Street Philadelphia

RADIUM
RENTAL SERVICE
BY
THE PHYSICIANS RADIUM
ASSOCIATION of CHICAGO, Inc.

Incorporated under the laws of Illinois, not for profit, but for the purpose of making radium available to Physicians to be used in the treatment of their patients. Radium loaned to Physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

Careful consideration will be given inquiries concerning cases in which the use of Radium is indicated

THE PHYSICIANS RADIUM ASSOCIATION
1105 Tower Bldg., 6 N. Michigan Ave.
CHICAGO, ILL.

Telephones:
Randolph 6897-6898

Managing Director:
Wm. L. Brown, M. D.

BOARD OF DIRECTORS
William L. Baum, M. D.
Wm. L. Brown, M. D.
Frederick Menge, M. D.
Thomas J. Watkins, M. D.
Louis E. Schmidt, M. D.

DISTRIBUTORS

Pharmaceuticals
- Sharp & Dohme
- John T. Milliken Co.
- Burroughs Wellcome Co.
- Lloyd Brothers

Specialties
- Parke Davis & Co.
- H. K. Mulford & Co.
- Hynson Westcott and Dunning
- H. A. Metz Laboratories
- Abbott Laboratories
- Wilson & Co.
- Armour & Co.
- G. W. Carnrick
- Reed & Carnrick
- Ciba & Co.
- Winthrop Chemical Co.
- Schieffiin & Co.
- Luyties Pharmacal Co.
- Waterbury Chemical Co.

Biologicals
- Lederle Antitoxin Laboratories
- H. K. Mulford Co.

Davol Rubber Goods
- Johnson & Johnson's Dressings
- Laboratory Glass Ware

LET US HAVE YOUR NEXT ORDER

DONLEY STAHL Co.
DEPENDABLE SERVICE

THE PHYSICIAN'S SUPPLY HOUSE
915 "O" St. Lincoln, Neb.

ANNUAL MEETING, LINCOLN, MAY 15-17, 1923

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, April, 1923. No. 4

CALCREOSE

Creosote in Pulmonary Tuberculosis

Powell, Latham, Ransome and other clinicians who have given the treatment of pulmonary tuberculosis special attention are of the opinion that creosote not only produces a beneficial effect on the digestive organs, and, so, on general nutrition, but also is of undoubted value in lessening the cough and the amount of expectoration.

CALCREOSE (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime.

CALCREOSE has the pharmacologic action of creosote but does not have the untoward effects on the digestive tract that creosote has. Patients do not object to taking CALCREOSE.

Write for the "C[illegible]se Detail Man"

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combination with calcium
THE MALTBIE CHEMICAL CO.
NEWARK, N.J.

COLLEGE OF
LIBRARY
APR 6
OF PHILADELPHIA

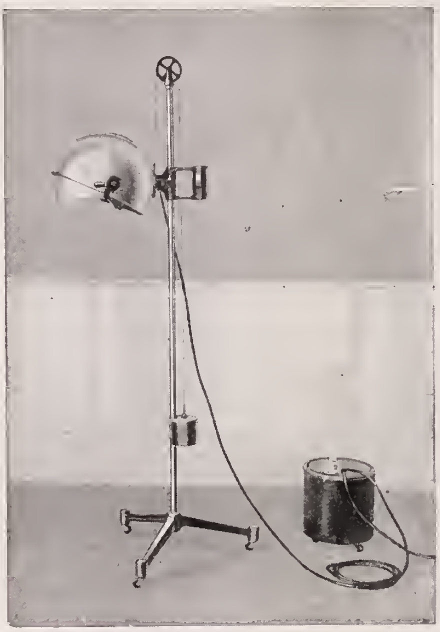
A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth



Alpine Sun Lamp

The Alpine Sun Lamp

The Kromayer Lamp

The Deep Ray Lamp

The Alpine Sun Lamp is one of the foremost producers of Quartz light therapy—Utra-Violet rays, and is an efficient and practical means of administering quartz light therapy.

Its field of indication covers the treatment of disease in most of its manifestations.

We will be pleased to send you some very interesting literature and proofs upon request.

Distributors for this territory.

Write us direct for liberal terms and prices.

WESTERN X-RAY COMPANY

OMAHA, NEBRASKA

RADIUM

RENTAL SERVICE

BY

THE PHYSICIANS RADIUM ASSOCIATION of CHICAGO, Inc.

Incorporated under the laws of Illinois, not for profit, but for the purpose of making radium available to Physicians to be used in the treatment of their patients. Radium loaned to Physicians at moderate rental fees, or patients may be referred to us for treatment if preferred.

Careful consideration will be given inquiries concerning cases in which the use of Radium is indicated

---

THE PHYSICIANS RADIUM ASSOCIATION

1105 Tower Bldg., 6 N. Michigan Ave.

CHICAGO, ILL.

Telephones:
Randolph 6897-6898

Managing Director:
Wm. L. Brown, M. D.

BOARD OF DIRECTORS

William L. Baum, M. D.
Wm. L. Brown, M. D.
Frederick Menge, M. D.
Thomas J. Watkins, M. D.
Louis E. Schmidt, M. D.

DISTRIBUTORS

Pharmaceuticals
- Sharp & Dohme
- John T. Milliken Co.
- Burroughs Wellcome Co.
- Lloyd Brothers

Specialties
- Parke Davis & Co.
- H. K. Mulford & Co.
- Hynson Westcott and Dunning
- H. A. Metz Laboratories
- Abbott Laboratories
- Wilson & Co.
- Armour & Co.
- G. W. Carnrick
- Reed & Carnrick
- Ciba & Co.
- Winthrop Chemical Co.
- Schiefflin & Co.
- Luyties Pharmacal Co.
- Waterbury Chemical Co.

Biologicals
- Lederle Antitoxin Laboratories
- H. K. Mulford Co.

Davol Rubber Goods
- Johnson & Johnson's Dressings
- Laboratory Glass Ware

LET US HAVE YOUR NEXT ORDER

DONLEY STAHL Co.

DEPENDABLE SERVICE

THE PHYSICIAN'S SUPPLY HOUSE

915 "O" St. Lincoln, Neb.

ANNUAL MEETING, LINCOLN, MAY 15-17, 1923

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, May, 1923. No. 5

CALCREOSE

Creosote in Pulmonary Tuberculosis

Powell, Latham, Ransome and other clinicians who have given the treatment of pulmonary tuberculosis special attention are of the opinion that creosote not only produces a beneficial effect on the digestive organs, and, so, on general nutrition, but also is of undoubted value in lessening the cough and the amount of expectoration.

CALCREOSE (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime.

CALCREOSE has the pharmacologic action of creosote but does not have the untoward effects on the digestive tract that creosote has. Patients do not object to taking CALCREOSE.

Write for the "Calcreose Detail Man"

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium
THE MALTBIE CHEMICAL Co
NEWARK, N.J.

LIBRARY
OF PHILADELPHIA

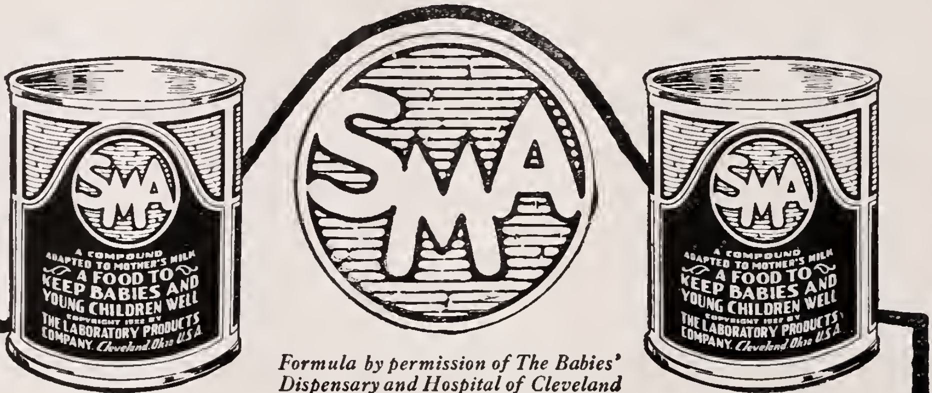
A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth


SMA
A COMPOUND ADAPTED TO MOTHER'S MILK
A FOOD TO KEEP BABIES AND YOUNG CHILDREN WELL
COPYRIGHT 1922 BY THE LABORATORY PRODUCTS COMPANY. Cleveland, Ohio U.S.A.

Formula by permission of The Babies' Dispensary and Hospital of Cleveland

A FOOD TO KEEP BABIES AND YOUNG CHILDREN WELL

Adapted to Mother's Milk

S.M.A. is a simple and satisfying food for infants who are deprived of mother's milk, or who require food in addition to what the mother can supply.

S. M. A. contains the required food elements in proper proportions. It not only prevents, but cures, spasmophilia and rickets.

S. M. A. is a food which requires only the addition of boiled water to prepare, whether for the month-old infant or the infant a year old.

S.M.A. has contained, from the very beginning, a liberal amount of cod-liver oil. It offers a sure and simple means of providing infants with a constant supply of this valuable agent in sufficient and proper proportion.

S. M. A. makes happy, solid, breast-fed looking infants, and insures normal development.

S. M. A. is sold by druggists on the order of physicians.

If your druggist cannot supply you with S. M. A. we would appreciate your sending us his name. And until he orders a stock, we shall be glad to supply you direct.

THE LABORATORY PRODUCTS COMPANY
1111 Swetland Building ∴ ∴ Cleveland, Ohio

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, June, 1923. No. 6

CALCREOSE

Creosote in Pulmonary Tuberculosis

Powell, Latham, Ransome and other clinicians who have given the treatment of pulmonary tuberculosis special attention are of the opinion that creosote not only produces a beneficial effect on the digestive organs, and, so, on general nutrition, but also is of undoubted value in lessening the cough and the amount of expectoration.

CALCREOSE (calcium creosotate) is a mixture containing in loose chemical combination approximately equal weights of creosote and lime.

CALCREOSE has the pharmacologic action of creosote but does not have the untoward effects on the digestive tract that creosote has. Patients do not object to taking CALCREOSE.

Write for the "Calcreose Detail Man"

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium
THE MALTBIE CHEMICAL CO
NEWARK, N.J.

LIBRARY
JUN 5 1923
PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

A FOOD TO KEEP BABIES AND YOUNG CHILDREN WELL

Adapted to Mother's Milk

The importance of fat in the diet of infants

One of the nutritional principles upon which S. M. A. is founded is that the fat content in the diet of infants is of vital importance in building up their resistance.

The fat in S. M. A. resembles the fat of breast milk

S. M. A. meets the need for an artificial food which contains as high a fat content as breast milk, and whose fat is comparable not only in quantity with the fat of breast milk, but also in *physical* and *chemical* properties.

S. M. A. fat is anti-rachitic and anti-spasmophilic

S. M. A. fat, in addition, has the advantage of being markedly anti-rachitic and anti-spasmophilic. It thus marks a distinct advance in infant feeding, since it prevents the development of these two nutritional disturbances.

S. M. A. contains all the required food constituents

S.M.A. also resembles breast milk in its protein, carbohydrate, salt and water content, and, in the hands of a constantly increasing number of physicians, is producing happy, healthy, breast-fed looking infants.

If you have not had the opportunity to observe the results of feeding S. M. A. in your practice, we shall be glad to send you, free of charge, a supply sufficient to enable you to do so.

THE LABORATORY PRODUCTS CO.
1111 Swetland Building ∴ Cleveland, Ohio

Formula by permission of The Babies' Dispensary and Hospital of Cleveland

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, July, 1923. No. 7

CALCREOSE

Intestinal Antisepsis

There is good evidence that creosote acts as an intestinal antiseptic but patients object to its use because of its taste and the untoward effect on the stomach.

CALCREOSE (calcium creosotate) is a mixture of approximately equal parts of beechwood creosote and calcium, possessing the pharmacologic activity of creosote but free from its untoward effect on the stomach, therefore

CALCREOSE lends itself admirably to the treatment of intestinal infections in which it is desired to administer creosote. Patients do not object to its use even when taken for comparatively long periods of time and in large doses.

TABLETS POWDER SOLUTION

Write for the "Calcreose Detail Man"

THE MALTBIE CHEMICAL COMPANY - - - NEWARK, N. J.

100 BROWN COATED TABLETS Calcreose 4 Grains

Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium.

THE MALTBIE CHEMICAL Co NEWARK, N.J.

A Suggestion to Professional Men

ROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY

Farnam at Seventeenth

Answering an Important Question

The Question—"Why is it possible to feed S.M.A. with good nutritional results to normal, full-term infants of varying ages (from birth to one year, or even longer if desired), without dilution or change?"

The Answer—This is possible because S.M.A. resembles breast milk, both physically and chemically, in all important respects. In other words, S.M.A. resembles breast milk not only in the quantity of protein, carbohydrate and salt—it also resembles breast milk so closely in the *character* of its *fat* that it is possible for S.M.A. to contain the same *quantity* of fat as breast milk. S. M. A. is also markedly anti-rachitic and anti-spasmophilic. S. M. A. thus offers the physician a means of supplying infants of all ages with the food elements in the same proportion as they would obtain them from breast milk. And this is why, in feeding S.M.A., it is only necessary to increase the *amount* of the prepared food as the infant grows.

S. M. A. is sold by druggists on the order of a physician. If you cannot obtain it from your druggist, please give us his name, and we will furnish you direct till he gets a supply. Complete literature for physicians on request—THE LABORATORY PRODUCTS CO., 1111 Swetland Building, Cleveland, Ohio.

A FOOD TO KEEP BABIES
and YOUNG CHILDREN WELL

Adapted to Mother's Milk

Formula by permission of The Babies' Dispensary and Hospital of Cleveland owners of the patent rights

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, August, 1923. No. 8

CALCREOSE

Intestinal Antisepsis

There is good evidence that creosote acts as an intestinal antiseptic but patients object to its use because of its taste and the untoward effect on the stomach.

CALCREOSE (calcium creosotate) is a mixture of approximately equal parts of beechwood creosote and calcium, possessing the pharmacologic activity of creosote but free from its untoward effect on the stomach, therefore

CALCREOSE lends itself admirably to the treatment of intestinal infections in which it is desired to administer creosote. Patients do not object to its use even when taken for comparatively long periods of time and in large doses.

TABLETS POWDER SOLUTION

Write for the "Calcreose Detail Man"

THE MALTBIE CHEMICAL COMPANY - - - NEWARK, N. J.

100 BROWN COATED TABLETS
Calcreose
4 Grains
Calcreose: A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium.
THE MALTBIE CHEMICAL Co
NEWARK, N.J.

A Suggestion to Professional Men

ROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

The Physician and S. M. A.

For Infants deprived
of Breast Milk

* * *

To be used only under
the direction of
a physician

* * *

Sold by druggists on
the order of
physicians

S. M. A. was designed to simplify the physician's work of infant feeding, and to make it more effective. Thousands of physicians, scattered throughout the entire country, have accepted S. M. A. as embodying this spirit of helpfulness.

These physicians find that the simplicity of preparing feedings of S.M.A. adds to the effectiveness of their work because it makes it possible for parents to follow their directions accurately.

In the hands of these physicians S.M.A. is producing happy, healthy infants, who grow and develop normally, and are free from nutritional disturbances such as rickets and spasmophilia.

For samples and complete literature, please address The Laboratory Products Co., 1111 Swetland Bldg., Cleveland, O.

A FOOD TO KEEP BABIES and YOUNG CHILDREN WELL

Adapted to Mother's Milk

Formula by permission of The Babies' Dispensary and Hospital of Cleveland

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, September, 1923. No. 9

CALCREOSE

Intestinal Antisepsis

There is good evidence that creosote acts as an intestinal antiseptic but patients object to its use because of its taste and the untoward effect on the stomach.

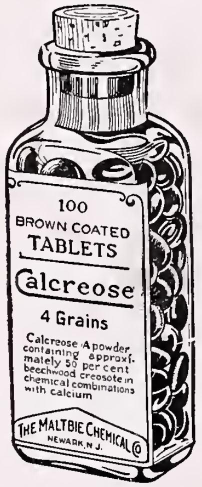
CALCREOSE (calcium creosotate) is a mixture of approximately equal parts of beechwood creosote and calcium, possessing the pharmacologic activity of creosote but free from its untoward effect on the stomach, therefore

CALCREOSE lends itself admirably to the treatment of intestinal infections in which it is desired to administer creosote. Patients do not object to its use even when taken for comparatively long periods of time and in large doses.

TABLETS POWDER SOLUTION

Write for the "Calcreose Detail Man"

THE MALTBIE CHEMICAL COMPANY - - - NEWARK, N. J.



100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combination with calcium
THE MALTBIE CHEMICAL CO
NEWARK, N. J.

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY

Farnam at Seventeenth

COLLEGE OF PHYSICIANS LIBRARY PHILADELPHIA

The fact that thousands of physicians are feeding S.M.A with uniformly successful results, to normal, full-term infants from a few days to one year of age or more, ***without any qualitative change, whatsoever,*** is convincing proof of the resemblance of S.M.A. to breast milk in all important respects.

The Laboratory Products Co.
1111 Swetland Bldg.
Cleveland, Ohio.

A FOOD TO KEEP BABIES
and YOUNG CHILDREN WELL
Adapted to Mother's Milk

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, October, 1923. No. 10

CALCREOSE

Intestinal Antisepsis

There is good evidence that creosote acts as an intestinal antiseptic but patients object to its use because of its taste and the untoward effect on the stomach.

CALCREOSE (calcium creosotate) is a mixture of approximately equal parts of beechwood creosote and calcium, possessing the pharmacologic activity of creosote but free from its untoward effect on the stomach, therefore

CALCREOSE lends itself admirably to the treatment of intestinal infections in which it is desired to administer creosote. Patients do not object to its use even when taken for comparatively long periods of time and in large doses.

TABLETS POWDER SOLUTION

Write for the "Calcreose Detail Man"

THE MALTBIE CHEMICAL COMPANY - - - NEWARK, N. J.

100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose: A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium.
THE MALTBIE CHEMICAL CO
NEWARK, N. J.

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY

Farnam at Seventeenth

USE ONLY ON ORDER AND UNDER SUPERVISION OF A LICENSED PHYSICIAN HE WILL GIVE YOU INSTRUCTIONS. TO MEASURE OUT POWDER USE ONLY S.M.A. MEASURING CUPS (2 OZ. OR 3 OZ. SIZES) ASK YOUR DEALER FOR THEM. TO PREPARE S.M.A. USE ONLY WARM BOILED WATER. MAKE EACH BOTTLE FRESH. KEEP BOTTLES AND NIPPLES CLEAN BY BOILING. DO NOT USE S.M.A. IN CASES OF DIARRHEA
PRICE $ 1.20

S. M. A.

To be used only on the order of physicians. For sale by druggists

❦

Requires only the addition of boiled water to prepare

❦

Formula by permission of The Babies' Dispensary and Hospital of Cleveland

The Results are Smiles

THE best way to sum up the results of feeding S. M. A. to infants deprived of breast milk is to say that the results are smiles.

Nobody but a physician experienced in infant feeding knows how important happiness is as an indication of well-being in his little patients.

S. M. A. babies are uniformly happy because they are uniformly well. They grow and develop normally, and are normally free from rickets and spasmophilia.

The key to this result of happiness may be found in the fact that thousands of physicians are feeding S. M. A. to normal, full-term infants varying in age from a few days to one year or more, *without any qualitative change* whatsoever. In other words, S.M.A. could not be so used unless it resembled breast milk in all important respects.

Incidentally, the smiles produced by S. M. A. are not confined to the babies. They are shared by the physician, pleased at the assistance which S.M.A. gives him in his work, and by the parents, whose smiles are of gratitude to the physician.

We do not distribute samples of S.M.A. broadcast to the medical profession, but to any physician who wishes to observe results in his own practice, we send a supply sufficient to enable him to do so. Please address:

THE LABORATORY PRODUCTS CO., 1111 Swetland Bldg., Cleveland, O.

A FOOD TO KEEP BABIES AND YOUNG CHILDREN WELL

Adapted to Mother's Milk

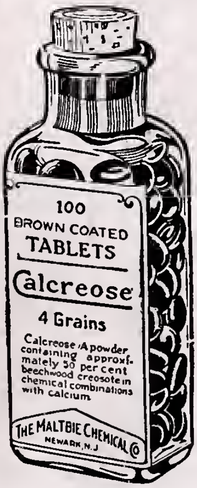
SMA

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, November, 1923. No. 11

Nov. 8, 1923


100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium.
THE MALTBIE CHEMICAL CO
NEWARK, N.J.

CALCREOSE

137 Miles

of brown coated **CALCREOSE** tablets were manufactured in 1922; that is, the tablets, laid in a row close together, would span that distance. To traverse it an automobile, traveling at a speed of 25 miles an hour, would require 5 hours and 25 minutes.

The number of physicians prescribing **CALCREOSE** is indeed, impressive.

CALCREOSE (Calcium creosotate) is a mixture of approximately equal parts of beechwood creosote and calcium, which possesses the pharmacologic activity of creosote but apparently does not cause gastro-intestinal disturbances.

Samples on request

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

SMA

A Food to Keep Babies and Young Children Well

Adapted to Mother's Milk

If you are prescribing S. M. A. we shall be glad to send you an additional supply so that you will have some on hand for any emergency. If you have never used it we should like to send you some so that you may observe results in your own practice.

USE ONLY ON ORDER AND UNDER SUPERVISION OF A LICENSED PHYSICIAN HE WILL GIVE YOU INSTRUCTIONS. TO MEASURE OUT POWDER USE ONLY S.M.A. MEASURING CUPS (2 OZ. OR 3 OZ. SIZES) ASK YOUR DEALER FOR THEM. TO PREPARE S.M.A. USE ONLY WARM BOILED WATER. MAKE EACH BOTTLE FRESH. KEEP BOTTLES AND NIPPLES CLEAN BY BOILING. DO NOT USE S.M.A. IN CASES OF DIARRHEA
PRICE $ 1.20

Infants fed on S. M. A. look and act and grow like breast-fed infants. Their flesh is firm, they develop normally, and they are normally free from rickets and spasmophilia. In addition, S. M. A. is so simple to feed that the physician can rely on his directions being followed to the letter. To be used only on the order of a physician. For sale by druggists. Formula by permission of The Babies' Dispensary and Hospital of Cleveland.

PLEASE USE THE COUPON

The Laboratory Products Co.
1111 Swetland Bldg., Cleveland, Ohio

Gentlemen:— Please send me a supply of S. M. A. free of charge.

Physician's Name ____________________

Street ____________________

City __________ *State* __________

I have used S. M. A. __________; I have not used S. M. A. __________

From Nebraska State Medical Journal

OMAR BIFOCAL LENSES

A SATISFACTORY BIFOCAL LENS
AT A VERY LOW PRICE

One-Piece Construction *Large Reading Field*

Invisibility

No Countersinks *No Depressions*

We Are the EXCLUSIVE Distributors

A Comfortable, Efficient and Satisfactory
ONE-PIECE BIFOCAL at Extreme Low Cost

OMARS *for* ECONOMY

American Optical Co.

Merry Optical Co. Division

OMAHA, Nebraska

The Nebraska Laboratory of Clinical Pathology

Dr. E. T. Manning
Manager

Dr. H. E. Eggers,
Consultant in
Pathology

Dr. J. T. Myers
Consultant in
Bacteriology and
Chemistry

792-96 Brandeis Theatre Building, Omaha, Nebraska

BETZCO SELECTED HARDWOOD APPLICATORS
Offer Safety and Convenience

Smoothex hardwood applicators are made from specially seasoned wood, strong and tough, but flexible. They are supplied in two standard lengths, 6 and 12 inches. You will find them of uniformly good quality and handily packed for instant use. 3CJ5 Hardwood Applicators, 12 inch, per bundle of 1,000, 85c; 3CJ6 Hardwood Applicators, 6 inches long, per bundle, 1,000, 65c.

Fill out and mail the Coupon

Frank S. Betz Co.
Hammond, Ind.
Enclosed is $1.50 for which send me 1 bundle each size of 3CJ5 and 3CJ6 applicators.

Name ....
Address ....
City .... State ....

SAVE MONEY ON

Your X-RAY Supplies

Get Our Price List and Discounts on Quantities Before You Purchase

Hundreds of Doctors Find we Save Them From 10% to 25% on X-Ray Laboratory Costs

AMONG THE MANY ARTICLES SOLD ARE

X-RAY FILMS. Duplitized or dental—all standard sizes. Eastman, Super Speed or Agfa films. Heavy discounts on standard package lots. X-Ograph, Eastman and Foster metal backed dental films. Fast or slow emulsion.

X-RAY PLATES. Paragon brand for finest work.

POTTER BUCKY DIAPHRAGM. Cuts out secondary radiation insuring finer detail and contrast. $250.00

BARIUM SULPHATE. For stomach work. Finest grade. Low price. Special price on 100 pound lots.

COOLIDGE X-RAY TUBES. 5 styles, 10 or 30 milliamp.—Radiator (small bulb), or broad, medium or fine focus, large bulb. Lead glass shields for radiator type.

DEVELOPING TANKS. 4, 5, or 6 compartment stone, will end your dark-room troubles. Five sizes of enameled steel tanks.

DENTAL FILM MOUNTS. Black or gray cardboard with celluloid window or all celluloid type, one to fourteen film openings. Special list and samples on request. Either stock styles or imprinted with name, address, etc.

DEVELOPER CHEMICALS. In bulk or ½, 1, 2 and 5 gallon sizes. Paragon, Eastman or X-Ograph Brands.

INTENSIFYING SCREENS, Sweetbriar, Patterson or T. E. screens alone or mounted in cassettes; reduces exposure from 6 to 18 times. All-metal cassettes several makes.

LEADED GLOVES AND APRONS. High grade, low price

FILING ENVELOPES with printed x-ray form. Special price on 2,000 assorted.

PARAGON X-RAY PLATES

If You Have a Machine Get Your Name on Our Mailing List.

GEO. W. BRADY & CO.
782 So. Western Ave., Chicago

INDEX NUMBER

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. VIII. Norfolk, Nebraska, December, 1923. No. 12

CALCREOSE

100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium
THE MALTBIE CHEMICAL CO
NEWARK, N.J.

137 Miles

of brown coated **CALCREOSE** tablets were manufactured in 1922; that is, the tablets, laid in a row close together, would span that distance. To traverse it an automobile, traveling at a speed of 25 miles an hour, would require 5 hours and 25 minutes.

The number of physicians prescribing CALCREOSE is indeed, impressive.

CALCREOSE (Calcium creosotate) is a mixture of approximately equal parts of beechwood creosote and calcium, which possesses the pharmacologic activity of creosote but apparently does not cause gastro-intestinal disturbances.

Samples on request

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

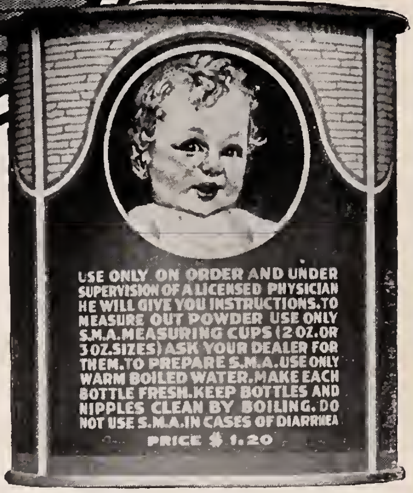
The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

SMA

For Infants Deprived of Breast Milk

1. Infants fed on S. M. A. look and act and grow like breast-fed infants.
2. Their flesh is firm, and they develop normally.
3. They are normally free from rickets and spasmophilia.
4. S. M. A. may be fed to infants of all ages without modification or change.
5. It requires only the addition of boiled water to prepare.



USE ONLY ON ORDER AND UNDER SUPERVISION OF A LICENSED PHYSICIAN HE WILL GIVE YOU INSTRUCTIONS. TO MEASURE OUT POWDER USE ONLY S.M.A. MEASURING CUPS (2 OZ. OR 3 OZ. SIZES) ASK YOUR DEALER FOR THEM. TO PREPARE S.M.A. USE ONLY WARM BOILED WATER. MAKE EACH BOTTLE FRESH. KEEP BOTTLES AND NIPPLES CLEAN BY BOILING. DO NOT USE S.M.A. IN CASES OF DIARRHEA

PRICE $ 1.20

To be used only on the order of a physician

For sale by druggists

Formula by permission of The Babies' Dispensary and Hospital of Cleveland

A FOOD TO KEEP BABIES and YOUNG CHILDREN WELL

Adapted to Mother's Milk

THE LABORATORY PRODUCTS COMPANY
1111 Swetland Building Cleveland, Ohio

Literature and Samples to Physicians on Request

This Book is due on the last date stamped below. **No further preliminary notice will be sent.** Requests for renewals must be made on or before the date of expiration.

DUE	RETURNED
MAR 20 1937	MAR 19 1937
FEB 15 1966	

A fine of twenty-five cents will be charged for each week or fraction of a week the book is retained without the Library's authorization.